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**Financial Instruments
for Nature Conservation
in Central and Eastern Europe**

Proceedings of a seminar
held at the
International Academy for Nature Conservation
Isle of Vilm, Germany, 27 May – 31 May 2001

BfN-Skripten 50

German Federal Agency for Nature Conservation

Bonn, 2001

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Cover design and layout: Andrea Saupe, Anke Modrakowski

Publisher: Bundesamt für Naturschutz (BfN)

(German Federal Agency for Nature Conservation)

Konstantinstrasse 110, D-53179 Bonn, Germany

Tel.: +49 228 / 8491 - 0

Fax: +49 228 / 8491 - 200

Internet: <http://www.bfm.de>

BfN-Skripten are not available in book trade

BfN-Skripten 50 may be ordered from

International Academy for Nature Conservation

Isle of Vilm, D - 18581 Putbus, Germany

e-mail: bfm.ina.vilm@t-online.de

download: www.bfm.de/09/090203.htm

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Printed on 100% recycled paper by the printing office of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety.

Bonn, 2001

Preface

The seminar "Financial Instruments for Nature Conservation in CEE", jointly organised by the German Federal Agency for Nature Conservation and the IUCN Office for Central Europe with financial support of the German Federal Ministry of the Environment, was held at the International Academy for Nature Conservation of the Federal Agency for Nature Conservation on the Isle of Vilm in May 2001 in order to look at two major problems: The need to find new funding mechanisms for nature conservation due to limited state budgets and the insufficient information on financial instruments relevant for and used in Central and Eastern European Countries.

Compared to Western Europe funding for nature/biodiversity conservation in Central and Eastern Europe is still at a low level and highly dependent upon external official (development) assistance. At the same time there is much potential in the wide variety of the so-called new and innovative financial instruments and incentive measures that are currently discussed on the international level.

Existing information and technical support concentrates on how to *acquire* funds from major donors like EU and GEF or from smaller domestic or international sources (mostly NGOs, foundations, etc.). Only limited work was done on how to *generate* financial resources within CEEC. Discussions on how to *foster* private sector investment in biodiversity business are coming up just now. Respective financial instruments are not yet established in CEEC. No work was done up to now on new approaches, and on approaches where first experiences are already available in countries from other regions.

The generation and leverage of new financial resources is of special importance for CEEC since the EU is obliging accession countries more and more to build up their own structures and to elaborate existing ones. An increasing amount of self-financing and commitment out of own sources is required. GEF as well requires a growing amount of financial commitment for projects to be supported.

Therefore, finding new approaches and improving existing ones in order to meet the financial needs of biodiversity conservation is of great importance for CEEC.

The specific objectives of the seminar comprised:

- An overview of instruments at international, national and local level
- Clarification of modalities of selected instruments (how they work and how to apply)
- Evaluation of their current status in the CEEC and discussion of their strengths and weaknesses
- Identification of possible synergies between instruments
- Discussion of the development or adjustment of new approaches to the specific situation in CEEC (e.g. carbon offset trading, labelling/certification schemes, sponsoring, investment promotion, venture capital funds, etc.).

We hope this seminar will stimulate further work on financial instruments for biodiversity conservation with special emphasis on the specific needs and circumstances in Central and Eastern European Countries.

Prof. Dr. Hardy Vogtmann
President of the Federal Agency for
Nature Conservation

Zenon Tederko
Director of the IUCN Office for Central
Europe

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List of Acronyms

AIJ	- Activities Implemented Jointly
BMZ	- German Federal Ministry for Economic Co-operation and Development
BR	- Biosphere Reserve
CBD	- Convention on Biological Diversity
CDM	- Clean Development Mechanism
CEE	- Central and Eastern Europe
CIFOR	- Centre for International Forestry Research
CO₂	- carbon dioxide
COP 5	- Conference of the Parties 5 (of CBD)
COP 6	- Conference of the Parties 6 (of CBD)
DC	- Development Co-operation (->ODA)
EBRD	- European Bank for Reconstruction and Development
ECFI	- European Conservation Farming Initiative
EF	- Environmental funds
EIT	- Economies in transition
ERU	- Emission Reduction Unit
ERU-PT	- Emission Reduction Unit Procurement Tender
EU	- European Union
GEF	- Global Environment Facility
GF	- Green Fund
GHG	- Greenhouse Gas
GTZ	- Deutsche Gesellschaft für Technische Zusammenarbeit
IDB	- Inter-American Development Bank
IFC	- International Finance Corporation
IRR	- Internal Rate of Return
ITTO	- International Tropical Timber Organisation
IUCN	- World Conservation Union
JI	- Joint Implementation
JIN	- Joint Implementation Network
MAB-Programme	- Man and Biosphere Programme
Mln.	- million
NEAP	- National Environmental Action Plan
NGO	- Non-governmental Organisation
NPA	- Nature protected area
NPV	- Net Present Value

NTFP	- Non-timber forest product
OECD	- Organisation for Economic Cooperation and Development
OP	- Operational Programme
PEBLDS	- Pan-European Biological and Landscape Diversity Strategy
PCF	- Prototype Carbon Fund
PROFOR	- Programme on Forests (UNDP)
PDF	- Project Development Funds
RUR	- Russian roubles
SDB	- Sustainable development baseline
SME	- Small and Medium Enterprises
TA	- Technical Assistance
TDR	- Tradable development rights
TNC	- The Nature Conservancy
UN	- United Nations
UNCED	- United Nations Conference on Environment and Development
UNDP	- United Nations Development Programme
UNEP	- United Nations Environment Programme
UNESCO	- United Nations Educational, Scientific, and Cultural Organisation
USAID	- US Agency for International Development
WB	- World Bank
UNFCCC	- U.N. Framework Convention on Climate Change
WRI	- World Resources Institute
WTP	- Willingness to pay
WWF	- World Wide Fund for Nature

Conclusions¹

Tight state budgets on the one hand, and precious landscapes and a wealth of rare species and valuable ecosystems on the other hand – this is the challenge that countries in Central and Eastern Europe (CEE) as well as in the Community of Independent States (CIS) face. The provision of sustainable long-term finance is hence one of the most crucial issues in nature conservation.

The German Federal Agency for Nature Conservation and IUCN-Central Europe therefore convened a seminar “Financial instruments for nature conservation in CEE and CIS” from 27 – 31 May 2001 at the International Academy for Nature Conservation Isle of Vilm/Germany to discuss and identify financing opportunities.

The participants concluded:

- 1) Finances and willingness to pay for conservation do exist. What is lacking are structures, personnel and knowledge for mobilising and harnessing these funds.
- 2) A particular problem is long term funding of recurrent costs, for which only limited financing instruments are available.
- 3) A strategy for conservation finance needs to be developed on site and national level.
- 4) In order to minimise dependence on international donors and to improve the national responsibility it is important to primarily generate finances within the country. Earmarking of the money raised is a necessity. For this, political commitment is clearly needed. Furthermore, cost reduction and increase in efficiency are important elements of a finance strategy.
- 5) Instruments that acknowledge and capitalise the value of biodiversity seem to be of highest potential for long-term and self-sustained finance. Such instruments are however not yet adequately used and developed. Among them are
 - revenues from consumptive and non-consumptive use of biodiversity,
 - Carbon offset trade
 - Payment for environmental services.

There is much scope for involving the private sector into these instruments.

- 6) For the successful application of the individual instruments legal, political, economic and cultural conditions within the country need to be conducive. Adaptations of the framework might be necessary in many cases.

¹ Both summary and conclusions were written by the editors and do not necessarily reflect the views of all speakers or participants.

Summary¹

Theoretical approaches

1) *Costs and benefits of conservation:*

- There are different types of costs associated with conservation (direct , indirect, opportunity costs of land use, land acquisition costs)
- Only long term funding secures sustainability
- Costs and benefits of conservation are spatially unevenly distributed: this is major disincentive for conservation at local level
- 3 strategies (1. Demonstrating economic values, 2. Capturing or realising economic values, 3. Equitable sharing of costs & benefits)
- Capture mechanisms:
 - Direct Uses (• Ecotourism/wildlife viewing tourism, • Sustainable use of biological resources (e.g. hunting, fishing etc)); Indirect Uses (• Payments for environmental services, • Bioprospecting, • Carbon trading,); Non-use/existence value (• Private nature reserves)
 - important to look at cost effectiveness and set priorities

2) *Ecosystem approach to financing conservation:*

- need for identifying synergies between instruments
- going beyond traditional financing instruments for nature conservation
- expanding the range of financial instruments that foster sustainable use as a conservation means
- exploring financial instruments not yet used for biodiversity conservation but commonly used for other purposes

3) *Overview of financial instruments:*

- a diversity of instruments is needed in terms of amount, scope and potential/ willingness to pay, and this diversity is available
- but only few instruments for long term finance (maintenance costs)
- few instruments to address and involve private sector
- limited experience with market-based instruments
- need to focus on instruments that can generate funds within the country and to adapt instruments to the specific situation

¹ Both summary and conclusions were written by the editors and do not necessarily reflect the views of all speakers or participants.

- 4) *Overview of experience with financial instruments in Russia:*
- innovative mechanisms are seen as of high potential; they could increase Russian federal/regional conservation budgets
 - Russia has experience with a number of instruments, e.g. taxes, surcharges,

International sources of finance

1) *Market based instruments:*

Joint Implementation and Emission trading for conservation

- could potentially transfer high sums of money into CEE/CIS
- uncertainties regarding modalities and implementation
- link to conservation needs to be established by the recipient countries; danger of disincentive (forestry)
- potential for being used for core funding
- administrative effort still unclear

2) *Transfer payments:*

a) GEF

- Long procedures, time-consuming and labour-intensive proposals
- Might be difficult to coordinate with yearly governmental budgets when project approval is delayed
- project objectives and implementation subject to global conservation benefit
- mostly seed money, but also for establishing Environmental Funds
- projects might occasionally be oversized

b) EU assistance

- Long procedures, time-consuming and labour-intensive proposals
- Might be difficult to coordinate with yearly governmental budgets when project approval is delayed
- project objectives and implementation need to be adapted to the EU programme in question
- only seed money; costs of personnel rarely covered
- most support programmes not specifically for nature conservation; conservation objectives might only be reached indirectly
- various funds can be used for conservation and might complement each other, but such integration is very difficult to achieve due to sectorial policies
- co-financing might be difficult due to uncertain length of approval procedures
- usually high quota of financial contribution by project proponent required
- certain programmes require advance financing without guarantee of refund

3) *Private sector investment in biodiversity businesses:*

European Conservation Farming Initiative

- aims at making sustainable land use profitable by giving technical advice and offering grants
- combining expertise and resources and interests of banks, NGOs and donors
- not started yet, so no lessons yet

National Instruments:

1) *Private money:*

a) Green Investment Funds

- win win situation (bank customers, banks and conservation benefit)
- steady reliable revenues; potential to finance maintenance costs (but not done in the NL)
- easy to administer, but criteria and transparency needed for spending the money

b) Fundraising

- sponsorship not reliable; small amounts only
- many possibilities in protected areas, but requires intensive work and business experience
- success depends on a climate of “charity” and a certain level of prosperity

2) *Environmental funds (either private or state or debt-swap-money):*

a) Ecofundusz

- debts swaps can channel substantial sums into conservation
- only start up money; long term financial prospects do not play a role in project selection
- relatively high level of transparency; open to proposals, but international donors have a say on project priorities (dependence)
- governmental bodies (e.g. National Park administrations) rarely take an active role and seldom submit project proposals despite limited budgets

b) Strana Zapovednaya

- there is private money available for conservation even in countries such as Russia that face economic and social crisis
- corporate financial support can create a sense of responsibility and ownership for the country's biodiversity

- when using private sector money intensive communication is needed to demonstrate the benefits to the company
- awareness raising and cooperation with the private sector help to improve the environmental performance of companies
- very time consuming; trust building takes time
- spending of fund money not transparent; broad participation not possible; danger of dependence

3) *Environmental taxes, levies and surcharges:*

- use depends predominately on political will
- general resistance against new taxes
- problem of earmarking tax revenues
- because of the disincentive character of a tax it might not be a sustainable source of income
- relatively easy to administer, if channelled into an environmental fund

4) *Creating revenues from conservation:*

a) Processing and marketing of local products

- relatively little seed money needed in helping local private business to establish
- creating income from direct and indirect use of biodiversity through local business, thereby creating employment, conservation benefits, local acceptance and incentives to continue sustainable land use; overall long term vision: self sufficiency
- very time and manpower consuming process, requires extensive communication on common visions and objectives, and trust building

b) Income from commercialisation of plants:

- theoretically there is high potential because of the trade volume,
- but so far no mechanisms in place to link private revenues and profits with conservation except for collection fees in some cases (which in turn present a financial burden on collectors from usually low income households)
- potential link mechanisms could be
 - tax on trade with medicinal plants (taxes channelled to conservation)
 - labelling (a percentage of the consequently higher price to go into conservation)
 - asking individual companies for conservation responsibility (Weleda example)

c) Ecotourism:

- high potential, but not everywhere (dependent on location)
- mechanisms to tap resources for conservation are more important than tourist numbers (pricing of entrance fees, sale of local products, redistributing tourist taxes, etc. with a percentage earmarked for conservation purposes)

5) *Private sector initiatives in PA management:*

- there is a high level of private interest in conservation in some countries
- highly attractive parks can be financially self sufficient
- private management of reserves might be an option for poorer countries, but needs clear agreements, standards, rules and controls
- there are different types of private involvement
- legal basis and “culture” needed for entrance fees

6) *Guidelines for PA managers:*

- strategic approach: identifying needs, cost reduction, analysing instruments
- P.A. managers should first try to achieve financial self-sufficiency as far as possible; then, cross-financing with the national PA system should be sought and international assistance should only be a tertiary option.
- The applicability and suitability of the different instruments differ and also depend on local circumstances.
- When looking for suitable financial instruments for PAs, special attention should be drawn on biodiversity services provided by the PA and on potential customers for these services (market opportunities).

1. INTRODUCTION

Costs and Benefits of Nature Conservation

Wolf Krug¹

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1 Why should conservationists be interested in economics?

Conservationists tend to blame economics for being responsible for environmental degradation, but it is rather 'bad' economics than economics per se that has to be blamed ('bad' economics does not account for the social costs of environmental degradation)

In fact:

- Economics can help us to understand why environmental degradation or biodiversity loss occurs
- Economics can show us the scale and distribution of costs and benefits of conservation among different stakeholders
- Economics offers 'real world' solutions to conservation (e.g. 'money' arguments instead moral arguments)

1.1 Saving biological diversity

What is biodiversity?

→ Species diversity, genetic diversity, and ecosystem diversity

Why are we conserving it?

→ Biodiversity provides primary life support functions – the foundations of life on earth

How do we conserve it?

→ Natural habitat or ecosystem conservation (protected areas, set-aside programmes, multi-species production systems)

1.2 Why do we need to know about the costs of conservation programmes?

“There is no such thing as a free lunch“ meaning that conservation costs money.

Budgets for conservation are typically tight meaning that cost-efficient spending of scarce funds is important

Sustainability in the context of conservation means that long-term funding has to be secured.

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2 The costs of protected areas

Direct costs:

- Park management: range and wildlife management, monitoring, law enforcement, removal of invasive species, habitat improvement (50-90% personnel costs)
- Tourism infrastructure and management

Indirect costs:

- damages outside protected areas caused by wild species

Opportunity costs of land use

- Land acquisition costs

	one-time costs (US \$)	annual costs (US \$)
Expanded reserve system		
Land acquisition	417,099,998	
Alien removal		
Initial clearing	68,852,268	
Follow-up clearings (NPV)	7,240,356	
Annual management costs		20,663,131
Off-reserve conservation		
Establishing contractual reserves	239,701	
Alien removal		
Initial clearing	28,853,369	
Follow-up costs	385,285	
Annual monitoring costs		1,446,498
Regional overhead		2,451,179
Scientific services overhead		2,071,393
Overhead for head offices		2,959,133
Total	522,670,978	29,591,335

Table 1: Example:

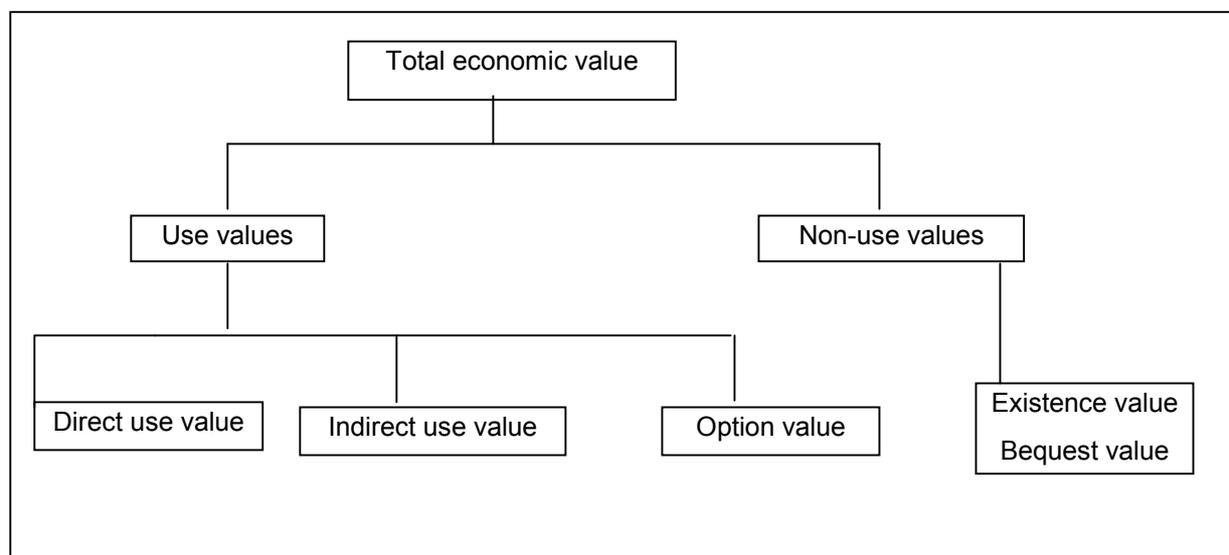
Estimated direct costs of achieving effective conservation in the Cape Floristic Region (South Africa)

(Source: Frazee, 2001)

Table 2: Who bears the costs of conservation

	Local (local individuals)	National (society/ nation)	Global (global community)
Direct costs	(✓)	✓	
Indirect costs <ul style="list-style-type: none"> • crop damages • livestock losses 	✓		
Opportunity costs	✓		
Land acquisition costs	(✓)	✓	

Box 1: The economic benefits of conservation



3 Categories of economic values attributed to environmental assets

Indirect use values	Indirect use values	Option values	Non-use or existence value
<p>= consumptive and non-consumptive sustainable utilisation of biological resources:</p> <ul style="list-style-type: none"> • hunting, fishing, non-timber forest products, timber, biomass • recreation 	<p>= ecosystem functions:</p> <ul style="list-style-type: none"> • watershed protection (erosion control, local flood reduction, regulation of streamflows, storm protection) • ecological processes (fixing and cycling of nutrients, soil formation, circulation and cleansing of air and water, climate regulation, carbon fixing, global life support) • biodiversity (gene resources, species protection, evolutionary processes) 	<p>= relates to the amount that individuals are willing to pay to conserve biological assets for possible future use. Option value is like an insurance premium to ensure the supply of something which would otherwise be uncertain</p>	<p>= relates to the amount that individuals are willing to pay to conserve biological assets unrelated either to current or future use</p>

3.1 Who reaps the economic benefits of conservation?

Ecosystem values	Local level (individual people)	National level (society/nation)	Global level (global community)
Direct use values	✓		
Indirect use values			
• watershed protection	✓	(✓)	
• erosion & flood control	✓	(✓)	
• cleansing of air & water	✓	(✓)	
• carbon fixing	✓	✓✓	✓✓✓
• biological diversity	✓	✓✓	✓✓✓
Option values	✓	✓✓	✓✓✓
Non-use/ existence values	✓	✓✓	✓✓✓

4 The causes for biodiversity loss

Fundamental causes

- Adverse socio-economic conditions
 - Population growth  - Natural habitat conversion
 - Poverty - Unsustainable land use

- Government or policy failure
 - Insecure or missing property rights over land and biological resources (e.g. open access)
 - Adverse macroeconomic policies (e.g. perverse subsidies)
 - Inappropriate or missing institutions

Economic causes

The main reason for the erosion of biodiversity is the underlying disparity between the private and social costs and benefits of biodiversity use and conservation

- The individual land user's view:

$$\text{BENEFITS}(C/SU) - \text{COSTS}(C/SU) < \text{BENEFITS}(\text{DEV}) - \text{COSTS}(\text{DEV})$$
- Society's view:

$$\text{BENEFITS}(C/SU) - \text{COSTS}(C/SU) > \text{BENEFITS}(\text{DEV}) - \text{COSTS}(\text{DEV})$$

Individual land users often fail to capture the social benefits of preserving biodiversity

 Missing markets for environmental goods and services

Economic solutions

- 1) Demonstrating economic values
 - Identifying possible economic benefits
 - Valuing of benefits in monetary terms
- 2) Capturing or realising economic values
 - Capture mechanisms (e.g. sustainable use of biological resources, park entry pricing, trust funds, transferable development rights)
 - Markets for environmental goods and services (e.g. carbon trading, markets for non-use values, payment for ecological services)
- 3) Equitable sharing of costs & benefits

5 Markets for biodiversity

Direct Uses

- Ecotourism/wildlife viewing tourism
- Sustainable use of biological resources (e.g. hunting, fishing etc)

Indirect Uses

- Payments for environmental services
- Bioprospecting
- Carbon trading

Non-use/existence value

- Private nature reserves

Prospects of potential markets

	How widely applicable?	Size of the market	Potential problems
Markets for direct uses			
• Nature tourism	Pristine areas with 'charismatic' features	Potentially high	Damage due to visitation
• Sustainable use of bio.	Depends on products	Potentially high	Overexploitation
Markets for indirect uses			
• Payment for ecological services	Especially in areas 'near' populations	Can be high	
• Bioprospecting	Areas with high diversity	Low per hectare values	Allocation of property rights
• Carbon sequestration	Potentially very widely	High	CDM & JI rules
Markets for non-use/existence value			
• Private nature reserves	Pristine areas	Potentially high	Depends on legal framework

6 Basic economic principles

- Cost effectiveness analysis: choose least-cost method
- Opportunity-cost approach: if you can choose between sites, go for the area with the lowest opportunity costs
- Priority setting: set priorities instead of trying to preserve everything

- Consider the marginal benefits of conserving additional land/species in relation to marginal costs
- Consider economies of scale: the larger the park the smaller the costs per hectare
- Private sector involvement: offers conservation at zero cost to the tax-payer

7 Conclusions

- The costs and benefits of conservation occur at various spatial levels (individual, community, country, world).
- Economics can be a powerful tool for conservation:
 - It helps to understand the distribution of costs and benefits of conservation, and
 - to create appropriate benefit capture mechanisms
 - To efficiently use scarce financial resources
- Market-based approaches are usually more efficient than approaches based on command and control

 **A sound understanding of the costs and benefits of conservation and possible economic instruments are a necessary condition for any effective and successful conservation policy**

Exploring Financial Instruments to Conserve Nature in the Russian Federation

Ecosystem Approach to Financing Nature Conservation

Gernot Baurle¹
IUCN, Poland

The scope of conservation has broadened in recent years from traditional approaches to nature conservation like species conservation or protected areas to the conservation of biodiversity on all its levels – from genetic diversity, to diversity of species and finally diversity of ecosystems. It was further recognized that the maintenance of ecosystem structure and functioning requires integrated or holistic approaches.

Financial instruments besides other instruments like legal or regulatory ones are a means of implementing the various approaches to biodiversity conservation currently available. According to which approach is common sense, instruments for its implementation are adapted, shaped or created accordingly. In short: The approach shapes the instruments.

Out of the experience that classical nature conservation approaches have limitations as the sole tool for management of biological diversity² the need for an ecosystem approach was emphasized and elaborated within the context of the Convention on Biological Diversity.

Classical nature conservation approaches frequently display one or more of the following shortcomings³:

1. Insufficient recognition that ecosystem functioning is vitally important for people, biological diversity and overall environmental quality;
2. Management is too site-specific and does not take into consideration the interlinkage with other sites;
3. Lack of an integrated consideration of nature and culture;
4. Too much emphasis on either the species characteristics (uniqueness, rarity) or on establishing protected areas;
5. Too little emphasis on the fact that the major part of the world's biological diversity lies outside protected areas;
6. Not all stakeholders in the management of any given ecosystem might be involved to a sufficient degree or in an integrated manner;

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² UNEP/CBD/COP/4/Inf.9: Report of the Workshop on the Ecosystem Approach, Lilongwe, Malawi, 26 - 28 January 1998

³ *ibid.*

7. Inappropriate assignment of costs and benefits, due to market distortion and failure, perverse incentives and lack of consideration of the values of public goods and services from ecosystems;
8. A failure to integrate or coordinate with other sectoral interests. Agriculture, environment, forestry, fisheries, health, planning etc., including nature conservation, are often managed separately by different governmental bodies or others in a non-integrated way which is often to the detriment of biological diversity and people.

With the aim to overcome these shortcomings and deficiencies of classical nature conservation approaches the concept of the ecosystem approach was adopted⁴:

The ecosystem approach is a strategy for the integrated management of land, water and living resources.

It recognizes that humans, with their cultural diversity, are an integral component of many ecosystems (→ influence on the scope of measures to be financed by financial instruments).

The ecosystem approach emphasizes the importance of ecosystem structure, processes, functions and interactions among organisms and their environment as fundamental elements of ecosystems.

It does not specify any particular spatial unit or scale. Instead, the term ecosystem can refer to any functioning unit at any scale. Indeed, the scale of analysis and action should be determined by the problem being addressed.

The ecosystem approach does not preclude other management and conservation approaches (biosphere reserves, protected areas, single species conservation programmes) but could, rather integrate all these approaches. There is no single way to implement the ecosystem approach, as it depends on local, provincial, national, regional or global conditions. Indeed, there are many ways in which ecosystem approaches may be used as the framework for delivering the objectives of the Convention (conservation, sustainable use and benefit sharing) in practice.

Twelve principles were formulated to describe the ecosystem approach in more detail. The principles aim to highlight what should be taken into consideration to achieve conservation and sustainable use of biological diversity and equitable benefit sharing. Instead of listing the principles themselves, I would like to present the operational guidance that was proposed⁵. It indicates some key points for conservation and sustainable use of biodiversity that have consequences for the use and further development of financial instruments.

⁴ Convention on Biological Diversity, 5th Meeting of the Conference of the Parties, Decision V/6

⁵ *ibid.*

1 Focus on the functional relationships and processes within ecosystems

Ecosystem functions and structure, and components of biological diversity in ecosystems play an important yet insufficiently known role for ecosystem resilience affected by biodiversity loss (species and genetic levels) and habitat fragmentation.

Relevance for financial instruments: Traditional financial instruments focus on species or sites and to a much lesser degree on ecosystem processes.

2 Enhance benefit-sharing

Benefit should go to stakeholders that ensure functions and management of ecosystems. This requires capacity building, proper valuation of ecosystem goods and services, the removal of perverse incentives that devalue ecosystem goods and services, replacement with local incentives for good management practices.

Relevance for financial instruments: Traditional financial instruments focus on protection/conservation; benefit sharing was rarely an issue.

3 Use adaptive management practices

Ecosystem processes and functions are complex and variable. Their level of uncertainty is increased by the interaction with social constructs, which need to be better understood. Therefore, ecosystem management must involve a learning process, which helps to adapt methodologies and practices to the ways in which these systems are being managed and monitored. Implementation programmes should be designed to adjust to the unexpected, rather than to act on the basis of a belief in certainties. Ecosystem management needs to recognize the diversity of social and cultural factors affecting natural-resource use. Similarly, there is a need for flexibility in policy-making and implementation. Long-term, inflexible decisions are likely to be inadequate or even destructive.

Relevance for financial instruments: Traditional financial instruments represent a fixed set of measures with limited adaptability.

4 Carry out management actions at the scale appropriate for the issue being addressed, with decentralisation to lowest level, as appropriate

An ecosystem is a functioning unit that can operate at any scale, depending upon the problem or issue being addressed. This understanding should define the appropriate level for management decisions and actions. Often, this approach will imply decentralization to the level of local communities. Effective decentralization requires proper empowerment, which implies that the stakeholder both has the opportunity to assume responsibility and the

capacity to carry out the appropriate action, and needs to be supported by enabling policy and legislative frameworks.

Relevance for financial instruments: Good governance, occasionally mentioned in relation to financial instruments, could be improved by management at lowest appropriate level.

5 Ensure intersectoral cooperation

The ecosystem approach should be fully taken into account in developing and reviewing national biodiversity strategies and action plans. There is also a need to integrate the ecosystem approach into agriculture, fisheries, forestry and other production systems that have an effect on biodiversity. Management of natural resources, according to the ecosystem approach, calls for increased intersectoral communication and cooperation at a range of levels (government ministries, management agencies, etc.).

Relevance for financial instruments: Start with the problem instead of the sector (problem oriented approach vs. sectoral approach), which automatically results in a cross-sectoral approach (example: habitat fragmentation caused by sectors like agriculture, transport, energy, mining) → requires the use of a set of financial instruments that need to be coordinated/integrated to adequately address the problem.

These five points of operational guidance are to be regarded as a starting point. The need for further conceptual elaboration and practical verification was emphasized⁶.

Why do we need an ecosystem approach to financing nature conservation?

- Human actions more and more affect and damage the structure and processes of ecosystems (although mankind is dependant of the goods and services that ecosystems provide).
- Existing financial instruments mainly address single components of ecosystems (which is not sufficient to deal with complex problems like the complexity of ecosystem structures, processes, functions and interactions and their disruption by human influence).

With a broadening of the scope of nature conservation, financial instruments have to be adapted/broadened and have to go beyond instruments traditionally used in nature conservation (see also Fig. 1).

As the ecosystem approach goes beyond traditional approaches for nature conservation so is the need to go beyond traditional approaches when dealing with financial instruments for biodiversity conservation.

⁶ *ibid.*

There is a need for an ecosystem approach to financial instruments with a focus to ensure sustaining ecosystem structures, processes, functions and interactions among its components.

Out of the understanding that a sector-wise approach does not lead to effective results for biodiversity conservation the need for a better integration of measures and policies is widely perceived.

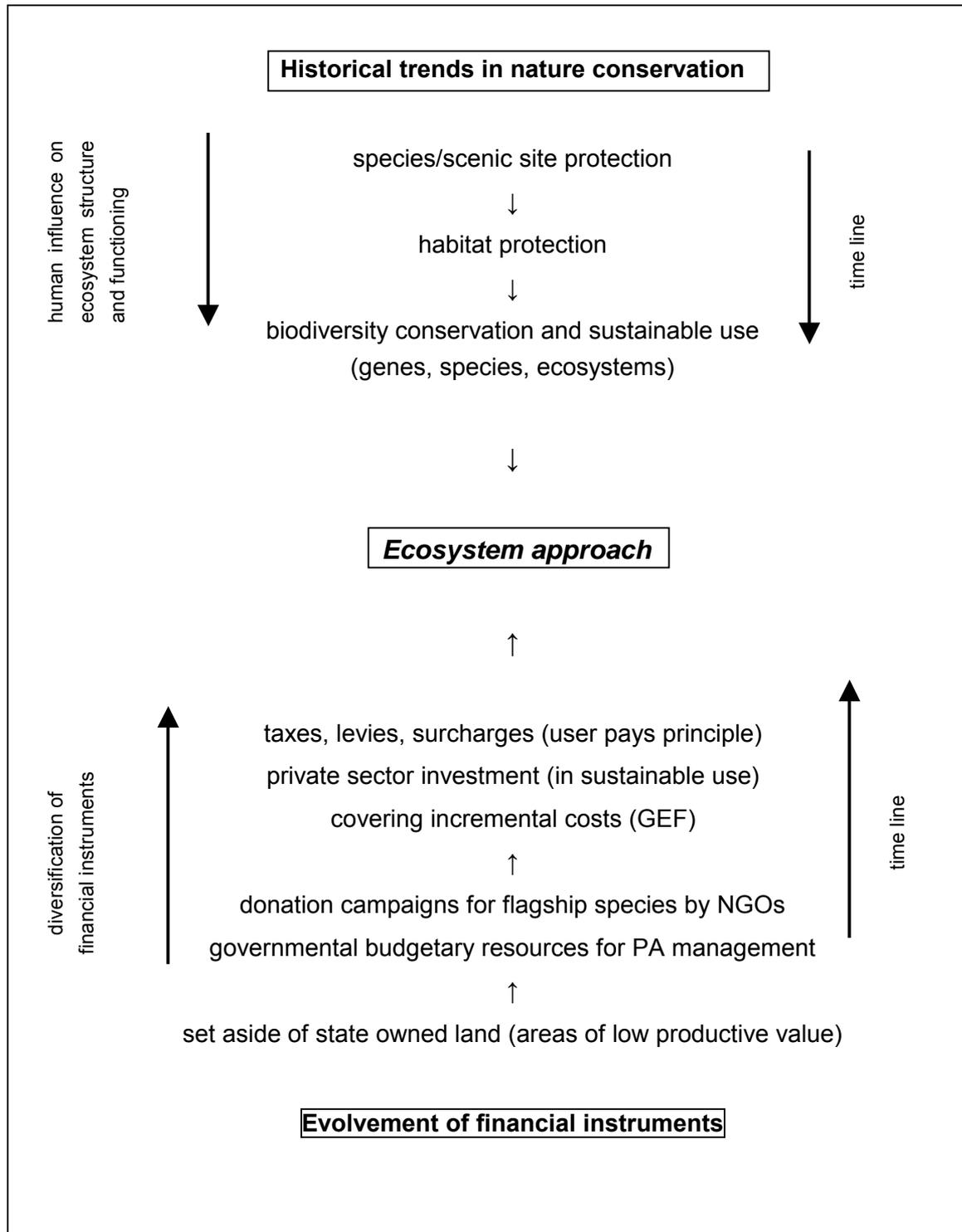
A supportive framework for a progress towards an ecosystem approach to financing biodiversity conservation may offer cross-sectoral policies and programmes (capable of addressing underlying courses for biodiversity loss as opposed to sectoral approaches that are only capable of addressing proximate causes of biodiversity loss). Examples are national biodiversity strategies or national environmental plans.

General message

- a) expanding the scope of biodiversity conservation = need to go beyond traditional financing instruments
- b) possibility to expand the range of instruments by considering financial instruments not yet used for biodiversity conservation but commonly used for other purposes
- c) need to expand the range of financial instruments that foster sustainable use as a conservation means
- d) need for identifying synergies between instruments and for integration of sectoral approaches and their related financial instruments
- e) design of financial instruments: financial instruments should aim to preserve ecosystem structures and functions in order to maintain the flow of goods and services provided by ecosystems
- f) target financial instruments towards problems (e.g. habitat fragmentation) rather than sectors

Box 1: A simplified description of the historical trends in nature conservation on the one hand (imagined time line goes from top to bottom) and the evolvement of financial instruments outlined with some example on the other (imagined time line goes from bottom to top). Traditionally used instruments are mainly site based and species centred instruments, new instruments comprise those supporting sustainable use and those that internalise costs and benefits of biodiversity conservation. Rising pressures on ecosystem structure and functioning require diversification and integration of financial instruments and their adaptive use.

Ecosystem Approach to Financing Nature Conservation



Overview of Financial Instruments for Nature Conservation

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1 Historical perspective

Conservation finance used to come mainly from state budgetary allocation. However, state budgets are increasingly under pressure. In addition, they are also limited in scope: not all conservation objectives are achievable by state transfer payments. This is why there has been a call for a diversity of instruments and new approaches needed to finance conservation.

Furthermore, costs and benefits of conservation are spatially unevenly distributed. This holds particularly true on a global scale: the poorer countries are often richer in biodiversity and have to pay comparatively more for conserving the world's natural heritage. This is why it was argued that we need new financial mechanisms for “gainers” to compensate “losers” (those who bear the costs of conservation, namely the opportunity costs). GEF has been set in place just for this reason.

In the following, I will look at different aspects of financial instruments with the aim of classifying them.

2 Costs of conservation

Before searching for or inventing new financial mechanisms one has to identify the costs of conservation. In protected areas three types of costs can be distinguished.

projects costs	<ul style="list-style-type: none">- land acquisition- restoration projects- interpretation centre etc.
maintenance costs	<ul style="list-style-type: none">- staff salary and training- rents and building maintenance- infrastructure- management

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	<ul style="list-style-type: none"> - compensation for damage caused by wildlife or profit foregone - management - control and monitoring etc.
emergency costs	

Project costs are one-off-costs, whereas maintenance costs are recurrent. Emergency costs crop up when a protected area is suddenly threatened by natural disasters, war or other catastrophes. It is easiest to get funding for project costs, because the activity is limited and thereby attractive to funding institutions. Maintenance costs are not “sexy” and have great difficulties in attracting finance. Here lies the biggest problem for conservation finance. The need for having a special fund for emergency cases has just been identified. The World Heritage Conservation has a World Heritage Fund for such cases, but it is very limited in scope (it only applies to World Heritage Sites) and amount.

3 Time scale of funding

As just indicated it is relatively easy to get one-off seed money for start up costs of innovative projects, but is extremely difficult to get longterm, steady and reliable funding for recurrent and core costs. Instruments are needed that provide finance for such costs.

4 Recipients of funds

Since conservation has long been regarded as a solely governmental task, only state authorities, e.g. protected area administrations, could apply and receive funding. For NGOs, many financial instruments still do not apply. For local resource users such as farmers, local communities and enterprises that carry out biodiversity benefitting businesses it is even more difficult to receive financial support for conservation.

5 Type of finance

In the literature three types of conservation finance are distinguished :

- transfer payments
- market approaches
- private sector investments

Transfer payments are paid by the government or NGOs or foundations in order to guarantee environmental services for which there are no markets yet.

Market approaches are mechanisms that (at least partly) reflect the economic value of nature’s services (e.g. CO₂-fixing, timber, recreation, water supply and purification).

Private sector investments are mechanisms where the use of biodiversity is directly or indirectly paid for. This is the creation of a market and could result in the generation of income for the protected site and the local people.

5.1 Transfer payments

Table 2:

Domestic	Public	<ul style="list-style-type: none"> - generation through taxes, levies, sucharges - spending through <ul style="list-style-type: none"> - grants, loans - subsidies, incentives - budgetary allocation or environmental funds
	Private	<ul style="list-style-type: none"> - lottery - donations
International	Public	<ul style="list-style-type: none"> - debt-for-nature swaps - GEF - multilateral banks - bilateral development agencies
	Private	<ul style="list-style-type: none"> - NGOs, foundations - debt swaps

All these instruments are quite well established. However, taxes and levies are rarely used specifically for generating funds for conservation.

5.2 Market based instruments

Table 3:

Domestic	<ul style="list-style-type: none"> - payment for environmental services (water supply, purification, soil erosion prevention etc.) - user fees (entry fees, tourism operating fees, resource use fees) - certification (use of the surplus for conservation) - green investment funds
International	<ul style="list-style-type: none"> - carbon offset trading - certification - airport fees/taxes

For many of the above instruments there is not much experience available yet. Examples for conservation finance through payments for environmental services come mainly from Costa Rica (e.g. payment for water from hydroelectrical companies to national parks). User fees are widely applied in some countries, but there is still much potential, particularly with park entry fees, in many locations. Certification has not yet yielded the sums needed for sustainable forestry or fishery. Green investment funds have so far not been used to a great extent for conservation finance. Carbon offset trading has the potential to generate large sums, but due to the political uncertainties it has not really started yet and it might even work as a disincentive for conservation (instead, favoring plantations with exotics).

5.3 Private sector investments

Table 4:

Domestic	- creating revenue from biodiversity (sale of sustainably harvested products, ecotourism, biodiversity prospecting)
International	- private reserves

There are several good examples where private investments really resulted in conservation benefits. However, in many cases only small amounts of the revenues are spent for conservation. In any case, mechanisms are necessary to control the impact of the private investments on biodiversity.

6 Sources of finance

In the literature, financial instruments for conservation are usually divided into three groups according to their source:

6.1 International instruments

Table 5: International instruments

<ul style="list-style-type: none"> • multilateral banks • GEF • bilateral development agencies • international foundations and funds (e.g. Critical Ecosystem Partnership Fund) • international NGOs • alternative financial mechanisms <ul style="list-style-type: none"> - carbon offsets - global levies (air travel, tourism packages, international credit card transactions)

- internet (user causes a site sponsor/advertiser to donate)
- consortia of banks, IFC (WB), NGOs and other organisations to act as grant supplier, advisers and intermediaries for investing in biodiversity benefitting businesses (World Heritage Enterprise Project, Conservation Farming in Europe)

The so-called alternative financial mechanisms are not well established yet. Some of them are not more than an idea (e.g. internet).

6.2 National instruments

Table 6: National instruments

- taxes, levies, surcharges and fiscal stamps (e.g. tax on country entry, hunting licences, water bills)
- tax deduction (Hungary example: 1% of income tax)
- foundations
- national environmental funds
- debt swaps
- lotteries
- public good service payments
- workplace donation schemes (deduction from pre-tax salary)

Of these national instruments I would like to draw the attention to taxes and levies, national environmental funds and lotteries, because these three instruments have the potential to provide steady and reliable finance for recurrent costs.

Taxes, levies and surcharges generate funds nationally, reliably and continuously. They also shift the burden of payment towards the users of biodiversity. The problem with this instrument however is that the sums generated end up at the treasury and only a small fraction ends up in conservation. Hence, earmarking is extremely important.

National environmental funds have five key advantages: They usually provide long-term funding, they usually also have a small grant capacity, they allow for coordination of, flexible take the form of an endowment (only interests are used), a sinking (the fund is used up over a certain time period) or a revolving (the fund is refilled with taxes etc.) fund. If the fund does not have much money it might be wise to use it as a sinking fund. A sinking fund might also be useful when additional money is only needed for a limited time span.

Conservation finance through lotteries plays an important role in the UK.

6.3 Site-level instruments

Table 7: Site-level instruments

<ul style="list-style-type: none">• user fees (e.g. entry fees, parking fees, fees charged to concessionaires or tour operators or prospecting firms, fees for transmission towers)• merchandising• sale of locally made or harvested products• guided tours, exhibits• cause-related marketing (special events)• adoption programme• corporate or individual donations• site memberships
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In some protected area, that are of high touristic value, these mechanisms have proven so successful that the PAs reached financial self-sufficiency.

7 Applicability and suitability

When designing a national conservation finance strategy or a finance plan for a protected area one has to investigate whether the instruments in question are really applicable to or suitable for the respective situation. Many of the instruments are quite difficult to implement or need considerable governmental facilitation for them to work. The volume of money raised is quite moderate in many cases.

Some of them might even present a risk to biodiversity and would require careful monitoring and a clear contractual basis. Many do not cover recurrent costs and others have only potential under certain circumstances (e.g. in PAs near population centres or only in very attractive PAs, or well-trained people are required).

8 Finance strategy

8.1 Steps

When designing a finance strategy you should work along the following steps:

- calculate costs
- try to reduce costs by
 - increasing efficiency
 - setting priorities

- removing perverse incentives
- analyse existing sources of income (trend, potential and options for you to act)
- analyse direct and indirect biodiversity services and develop finance options (e.g. user fees, licences, donations)
- analyse potential customers for such biodiversity services (e.g. tour operators, companies, NGOs, etc.)

8.2 Principles

For financing a protected area, you should first aim at financial self-sufficiency as much as possible. You should then try to establish a system of cross-financing within the national protected area system (the more attractive parks should support the less attractive parks). Only as a supplement, you should finally look for international support.

Exploring Financial Instruments to Conserve Nature in the Russian Federation

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1 Abstract

This paper discusses financial instruments that are employed in Russia to achieve the integrity of ecosystems, including the conservation of biodiversity, sustainable use of natural resources (ecological ‘goods’ and ‘services’), and equitable sharing of benefits and risks arising out of their utilization. In particular, the paper describes financial instruments envisaged in the Russian national strategy for rare species conservation, approaches to environmental insurance, and regional case studies of nature protected areas management in two economic sectors, namely agriculture and fishery.

2 Financial instruments for nature conservation used in Russia

There are several existing and potential environmental funding sources:

2.1 Domestic sources:

- the government budget (at the national, or federal, regional, local levels) - it was formerly the only source of financing that now has thinned to a trickle;
- environmental extra-budgetary funds (they were formerly a significant source based on collected pollution charges that were turned into eco-taxes and channelled to the Federal budget by Parliament in 2000 thus abolishing the federal eco-fund and leaving regional eco-funds at discretion of regional administrations);
- enterprises (these sources depend very much on their overall performance, with exporting firms usually paying more attention to environmental issues to stay competitive internationally);

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- sectoral ministries (a hardly reliable source of finances);
- commercial loans from banks (commercial banks are reluctant to furnish loans to unreliable clients such as Nature Protected Areas (NPAs); if they do they do not their loans do not exceed three years and interest rates are very high, since the inflation rate in Russia is estimated at about 20 per cent in 2001; on the other hand, Nature protected areas are not enthusiastic to turn to banks for loans due to a lack of experience with loans, being used to operate with non-returnable government grants);
- investment venture funds (underdeveloped in Russia);
- natural resources charges (very few are recycled to nature conservation);
- Russian private sponsors (these are few and do not have enough incentives under the existing legislation);
- NPAs own entrepreneurial efforts (for the time being, these are quite exceptional but they are viewed as a promising source of revenues that should be encouraged);
- land owners who have rare species on their lands and agreements with authorities to conserve biodiversity (this is non-existent in present day Russia since land privatisation is only now – in mid-2001 – being enacted and is limited only to agricultural lands for the time being).

2.2 External (foreign, international) sources

- international organisations, such as United Nations Environment Programm (UNEP), United Nations Development Programm (UNDP), Organisation for Economic Cooperation and Development (OECD), World Wide Fund for Nature (WWF), World Conservation Union (IUCN) , EU (usually, grants);
- bilateral agreements (e.g., US Agency for International Development (USAID), UK KnowHow Fund, Dutch Embassy in Russia, Denmark);
- foreign foundations (McArthurs, Rockefeller, Gillan, Mott foundations from the US);
- international financial institutions (grants, soft loans) from, e.g. Global Environment Facility (GEF), World Bank, European Bank for Reconstruction and Development (EBRD).

Government budgetary financing is focused on: the maintenance and functioning of NPAs; including their staff salaries, monitoring and research activity. This type of financing is usually provided under Federal Programs that deal with environmental protection and nature conservation.

Federal budget allocations for environmental activities have been severely slashed over the recent decade (in 1996 they amounted to a mere 6% of all environmental expenditures). Regional and local administration budgets bring another 22%, with the main part being allocations from enterprises - 67%.

A large share of natural resources is extracted illegally. Some sources argue that it reaches 75% in the Russian Far East. The Federal Tax Police Service indicates that 50% of all cut timber in Russia as a whole is exported illegally ('Vremya MN', Russian daily, June 14, 2001) and therefore is not recorded in the official statistics. A similar situation is with marine bioresources. Auctions to sell catch quotas have shown that Russian fish companies are at a severe disadvantage compared to foreign companies. In addition, up to 40% of Russia's economy, mainly natural resource dealings, is considered to be 'the shadow economy'. The corollary to that situation is the government does not control that part of the economy and natural resource statistics does not take fully into account this phenomenon underrating production outputs and sales volumes.

In addition to direct environmental financing reflected in the official environmental statistics, budgets of different levels indirectly support environmental activity through:

- investments from development project budgets,
- incentive measures to encourage environmental investments by enterprises offering them, in return, environmentally friendly entity ratings, labels, etc.;
- development of social infrastructure (such as municipal services).

Environmental funds (EF) were an important instrument for environmental financing until recently when the Russian Federal Environmental Fund was abolished in 2000 and regional (provincial) environmental funds were left at the discretion of regional authorities. Their revenues came mainly from environmental - pollution and waste disposal - charges. Environmental funds would usually provide grants to government or private companies to undertake environmental activities.

It used to be a common practice that enterprises did not actually pay pollution charges required by law to their regional environmental fund. Instead, they would enter into an agreement with the local administration (a regional environment committee) that stipulated that part of a company's own money spent for environmental purposes and equal to the amount of pollution charges would be considered as their contribution to the environmental fund (an offset procedure). Issuing grants by environmental funds was the usual practice. About 60-70% of finances were spent for investment projects, but their share in total environmental investments was about 3% (annual environmental investments from enterprises across Russia were about \$600 mln., while investments from environmental funds amounted to \$13 mln.). In general, environmental expenditures in Russian regions were about 1 per cent of their regional budgets with nature conservation expenditures amounting to about 3 to 10 per cent of the latter.

Budget revenues in a Russian Far Eastern province (Primorsky Krai) included 44% of various taxes, while the share of natural resource use payments was only 1.2%. This Province enjoys rich timber, biological, fish, and mineral (coal) resources.

All environmental funds capture proceeds from environmental charges and are not subject to inter-sectoral redistribution through the central budget. By doing so, they secure critically needed resources for environmental protection, in periods when priorities relegate the environment to quite low a rank. In Poland, for example, the fund is reported to have made “a significant contribution to the financing of environmental sustainability during the transition period, when capital markets were poorly developed [although] limited attention [was] paid to economic performance.” (Panayotou 1995, 11)

Environmental funds perform unequally across countries. In the countries of central and eastern Europe, national environmental funds raised US\$ 9.44 per capita in 1997. In the countries that used to be part of the former Soviet Union, by contrast, revenues to national environmental funds were as low as US\$0.16 per capita in the same year (Francis et al. 1999). The reasons include low pollution charge rates, sub-optimal collection, and drops in emissions. In current rubles, revenues have increased every year since 1993. However, as shown by the figures in constant 1993 rubles, real revenues have not kept up with inflation. Moreover, in dollar equivalent, 1999 saw a sharp drop in revenues, due to the depreciation of the ruble in August 1998.

Notwithstanding low revenues (totaling \$134 mln for ecofunds of all levels in 1999), it has been argued that the real problems with Russia’s environmental funds are not lack of resources, but a lack of sound projects, balanced supervision and transparent decision-making (Jacobsen 1998). Indeed, although the Russian federal law mandated that regions spent these resources on environmental protection activities, “there appeared to be wide discretion in allocating the funds. The funds were often used to fund non-environment related activities.” (World Bank 1994, 18)

Russian environmental funds started out as extra-budgetary funds. For transparency reasons it was decided to integrate them in the budget in 1998. Nevertheless, earmarking remained the practice to 2001, i.e. environmental fund revenues serve to finance expenditures related to the environment, not general budget expenditures. (B. Bosquet Greening the Tax System in Russia, WWF-Russia, 2001).

Pollution charges make up around 80 percent of the resources of Russia’s environmental funds. The balance is provided by damage indemnities, fines for violations of environmental legislation, bank interest and other sources (Golub 1998; Jacobsen 1998). Practically, pollution charges are distributed to the federal budget (19 percent) and the network of environmental funds (81 percent).

At the regional level in Russia, say, in Siberia’s Tomsk Province, its Ecofund revenues for the period 1997-99 came from air pollution, water pollution and waste disposal charges with small revenues derived from fines, interest from deposits and legal actions for environmental damage. The total revenue in 2000 was approximately Russian roubles (\$1~RUR30) RUR 43mln, mostly from pollution charges (including RUR 19.8mln in offsets), with RUR 2.5mln from fines and lawsuits and RUR 60,000 from interest. Ecofund revenues do not include natural resource user fees which accrue to the administration budget. The Tomsk Oblast

Budget Law for 2001 gives a figure of RUR 32.5mln for budgeted revenues. This total is approximately \$1.14 mln., using January 2001 exchange rates.

Ecofund expenditures (including offsets and other non-monetary transactions) for environmental protection by sectors (current prices, in thousand Roubles) are given in Table 1 in which the share of natural conservation expenditures tends to markedly grow over the recent years.

Table 1: Tomsk Province Ecofund expenditures (current prices, in thousand RUR)

Expenditures	1997	1998	1999
Air	2 564	5548	5437
Water	7 488	3160	5770
Wastes	2 559	2208	4793
Soil/land protection	0	0	0
Nature Conservation	368	507	1050
Environmental education and raising public environmental awareness	1 226	1016	2032
Monitoring and information systems	0	0	255
Research	518	306	863
Remediation of accidents/ natural disaster consequences	173	139	55
Total	19,073	18,376	28,537

3 The Russian system of natural resource user fees

3.1 Pre-revolutionary system

Natural resources played an important role in the economy of pre-revolutionary Russia. In 1913, grain, timber, petroleum and coal provided almost 50 percent of Russia's export earnings (Goldman 1978). Data available for Yaroslavl Oblast indicate that they provided around one-third of regional budget revenues between 1903 and 1915 (Fomenko et al. 1997). User fees covered most resources, including fish. Individuals who wanted to fish had to pay for ticket charges and charges for renting the location. Charges would vary with the productivity of the fishing grounds, i.e. the resource rent (Harrison and Titova 1997). This role probably has to do with the mostly rural structure of the economy at the time. Industry was not developed until the later years of Lenin's rule and especially Stalin's, and the industrial sector could therefore not have contributed largely to national income and revenues. All the same, the fact is that natural resources did contribute a large fraction of export earnings and budget revenues, both at the national and regional level before 1917.

3.2 Current system

Real, albeit low, natural resource user fees were introduced by the tax reform of the early 1990s, at the outset of the transition to a market economy. They were intended to correct for the traditional under-valuation of resources and provide specific tax revenues for regional budgets (Gofman and Gusev 1994; Kasyanov 2000). Today all natural resources, biological or mineral, are subject to some pricing, taxation or licensing system. Some resources tend to be heavily taxed, e.g. crude oil, others widely escape pricing and licensing, e.g. fish. In most cases, however, rent-seeking subsists.

The Russian system of natural resource and environmental taxes consists of the mains items listed in Table 2. Various payment types exist, including natural resource user fees, pollution charges, consumer taxes on energy, and prices paid to acquire public assets such as land.

Table 2: The Russian system of natural resource and environmental taxes

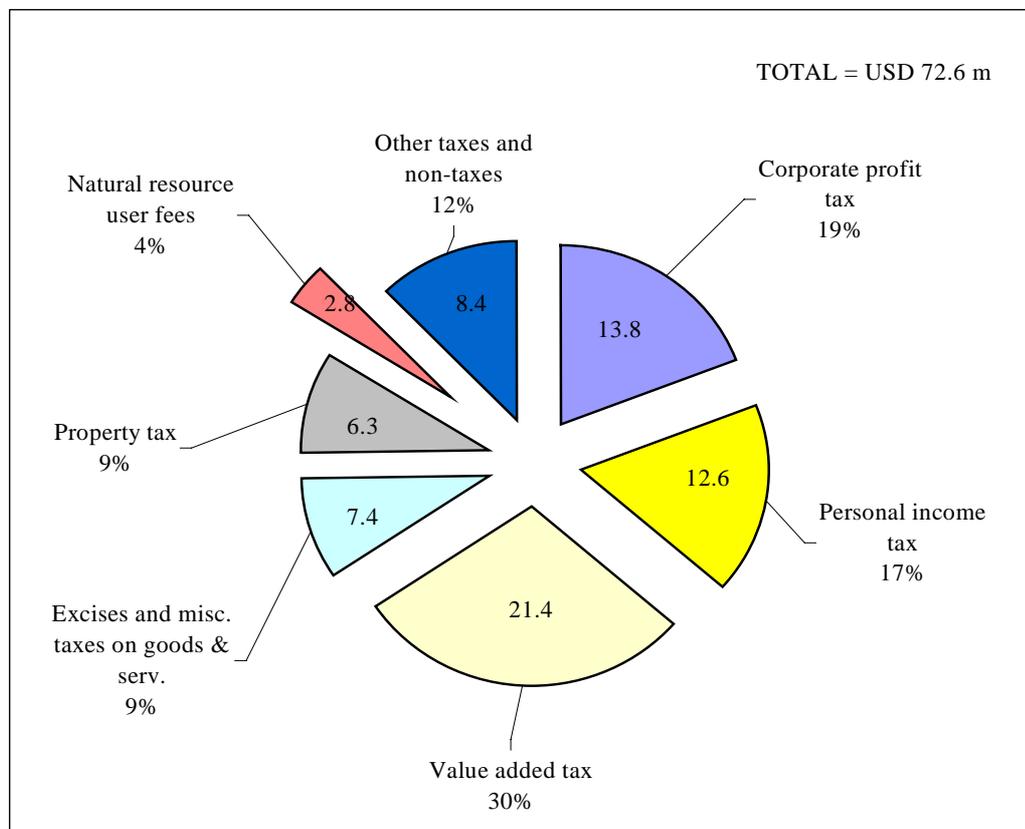
(renewable natural resources)

Type of payment	Description
Fees for the use of the continental shelf	Divided into mineral and living resources.
Forest user fees	
Payments for the use of land	
Land taxes	Land taxes are due on private land or land used under conditions of life long possession. Land taxes are the lowest on forested land.
Land rentals	Land rentals are due on public land, i.e. land owned by the state, regions or municipalities.
Normative prices	Normative prices are paid upon transfer of land from the state to private hands. Payments are the highest on urban land, reaching very high levels in city centers, but are extremely low in rural areas. By law, normative prices do not exceed 75 percent of market value.
Payments for the use of aquatic biological resources	These payments are due to cover the cost of research, management, protection and reproduction of aquatic biological resources, in addition to fines for damage caused to resources and violations of normative acts. The payment is made upon receipt of the fishing quota. The rates range from RUB 20 per ton for Far Eastern herring and Far Eastern salmon to RUB 10,000 per ton of high-grade crab.
Payments for the use of terrestrial biological resources	Payments for hunting wild animals consist of a permit per animal killed or day spent hunting, and a penalty for infractions. Payments are determined in relation to the minimum wage. For example, the license to kill a beaver equals 0.2-0.6 times the minimum wage, while for a bear it equals 3-6 times the minimum wage. For plants and animals listed as protected species in

Type of payment	Description
	the Red Book, no regular licenses can be granted but fines are applicable to punish hunting or collection. These fines are set as a multiple of the minimum wage as well. For example, for plans, they range from 0.2 to 300 times the minimum wage. Finally, small entrance fees are sometimes charged for the right to visit national parks.

Sources: GOR 1996; IFEI 1998; Kasyanov 2000; Mikheva and Sheingauz 1999; Roskoshnaya 2000; Shevchuk 1999; Titova 2000.

Box 1: Novgorod oblast own budget revenues 1999 (Provisional)



Source: B. Bosquet (1999)

4 Economic and financial instruments for Russian national rare species conservation strategy

4.1 Economic and financial instruments objectives

The objective of economic instruments of rare species conservation is to provide and stimulate conditions that make it (a) profitable for stakeholders to conserve rare species,

contribute to their exclusion from Red Data Books, and use valuable species on the controlled sustainable basis; and (b) unprofitable for them to act otherwise. These instruments include two kinds of measures:

1. measures regulating existing market relations through charges (fines) and subsidies to:
 - restrict (forbid) human economic activities affecting rare species, first of all – excessive use (e.g., gathering, hunting, poaching), pollution of areas with rare species, and trade in rare species and their parts;
2. measures creating new markets:
 - stimulate controlled recreation (including tourism, ecological trails, etc.) related to rare species and their watching within their natural and human-made habitats (e.g. zoos, aquariums, seaquariums, etc.);
 - stimulate rare species breeding in specialised farms and in captivity for commercial purposes;
 - issuing shares for environmental sites with rare species, issue conservation bonds, establish a rare species insurance system, provide rare species conservation compensations (incentives) for private land owners;
 - promote controlled commercial activities in National Parks and around protected areas.

The objective of financial instruments is to identify and use budget and non-budget (including foreign) funding sources effectively, and co-finance specific rare species conservation measures.

Economic instruments should be based on principles and priorities developed by natural scientists (considering: what must be conserved, to what extent, what damage must be restored, and temporary factors, including inter-generation and spatial ones) with most comprehensive ecological-economic accounting of rare species.

4.2 Economic and financial issues of the rare species conservation strategy implementation

The analysis of economic and financial aspects of rare species conservation is determined by the extreme importance of the issue:

- rare species conservation is a part of the general issue of equitable and sustainable natural resource use, including gaining appropriate benefits – rare species are the most vulnerable component of these resources
- this is a part of the objective of ecosystem biodiversity and integrity conservation as the human environment and sustenance basis and ecosystem development basis

Rare and endangered species conservation economic and financial instruments establishment and functioning issues are closely related to:

- the necessity to develop techniques of their comprehensive ecological-economic and social valuation (genome value, zoo rare species valuation, etc., in addition, rare and endangered species have great information, scientific, and essence value);
- opportunities of this value capturing through economic and financial instruments designed, primarily, to prevent damage to the humanity due to biological species elimination and global sustenance potential decrease; to stimulate biodiversity conservation and sustainable use; and
- economic aspects of rare species proprietorship issues (these are addressed in the “legislation” chapter of the Strategy).

Three directions listed above are the basis of the economic and financial chapter of the Russian Rare and Endangered Species Conservation Strategy.

The experience demonstrates that:

- a) it is impossible to guarantee restoration of all rare and endangered species because:
 - this is often too expensive, and sometimes – very difficult;
 - in most cases, it is more effective economically to prevent the elimination;
- b) essential measures strongly depend on particular species.

Restoration of some large mammals and birds may require great funds and efforts of hundreds of motivated specialists. Even in such cases, success can not be guaranteed. Not all rare species, however, require significant resources – one person could provide effective monitoring, observations, and measures essential to save many endangered plant species, especially if they grow within a single area.
- c) according to the Convention on Biological Diversity (Articles 8 (k) to 9 (d)), economic measures must be based on appropriate legal or normative acts.
- d) it is necessary to localise intense economic use zones through more efficient utilisation of already developed areas and damaged area restoration. In areas involved into economic activities, it is necessary to:
 - provide more favourable environmental conditions for living organisms and humans (even if the biodiversity is impoverished and altered) through artificial sustainable ecosystem creation; and
 - complex control of all impacts and their consequences.
- e) voluntary assistance and support of entrepreneurs and local communities is an important factor of successful species restoration, especially through public understanding of and awareness about rare and endangered species.

In addition, it is necessary to understand clearly what must be done, and use the terminology correctly. For instance, 'rehabilitation' of a species means resumption of its productive utilisation, and 'restoration' of a species – return to its initial condition, although there is no

significant difference between these two terms, because natural ecosystems change continuously, and the term 'initial condition' is amorphous.

4.3 Economic issues of the strategy implementation

It is necessary to develop three groups of issues:

- 1) ecological-economic accounting of rare species including economic and non-market valuation of rare species;
- 2) economic instruments (e.g. ecological taxes, payments and penalties for rare species use and environmental pollution, addressed subsidies, insurance, etc.) stimulating rare species conservation;
- 3) well defined property rights on natural resources, including rare species.

To achieve these goals, it is necessary to use economic instruments (even if rare species are not involved into market relations), budget and non-budget funding. Both economic and financial instruments require co-ordinated efforts at local, national and international level in the framework of overall globalisation processes. Rare species conservation opportunities are closely connected with economic situation in Russia as a whole and in its regions, and appropriate economic, financial and institutional instruments.

To make structured and ecologically balanced changes in the economy, it is important to identify rare resources and services correctly, impart them with increasing economic value, and arrange appropriate registration of this value in economic and other human activities. This would allow to use market instruments and price regulators effectively – i.e. the state should provide sustainable development through macroeconomic regulation, indicative planning, taxation tools, privileges, credits, subsidies, etc.

There are, therefore, two interrelated objectives of Russian budgetary, financial and economic policies related to the comprehensive capturing of rare species economic value:

- to apply charges to stimulate the efficient use of natural (more widely – ecological) resources, in particular for rare species conservation; and
- to establish financial and economic instruments to achieve natural capital sustainable use.

To preserve renewable natural capital for future generations, and conditionally renewable natural capital economic instruments should be worked out allowing to:

- use part of revenues (i.e. profit/income of private and governmental companies, institutions and agencies) generated from utilisation of non-renewable natural capital (e.g. oil, gas, other mineral resources) for conservation of rare species, biodiversity, and renewable natural resources;

- use part of revenues resulted from commercial uses of renewable natural resources (profit of companies) and poaching penalties (e.g. money of ecological funds) for rare species conservation;
- use all revenues gained from rare species trading on the basis of licensed hunting (or catching) or other ways of their licensed removal from the natural environment for rare species conservation.

These objectives intend the realisation of the principle of market and non-market relations mutual complementarity in order to ensure sustainable development. It is necessary to keep in mind that the natural environment is divided into two unequal parts – market (i.e. involved into market relations) and non-market. From the economic perspective, all the natural heritage can be considered natural capital, and sustainable development, therefore, must intend the necessity to prevent the decrease of this capital from generation to generation. This is a prerequisite of 'strong' sustainability. 'Weak' sustainability includes the possibility to replace some parts of the natural capital with produced or human capital – i.e. the possibility to sacrifice some species and replace their values with produced/human capital values.

It is rational, therefore, to stimulate funding of the existence (development) of the non-market part of the environment using means (profit) gained from (legal) trade of market (and usually – renewed anthropogenically) species (natural resources) – e.g. cattle breeding, agriculture, aquiculture farms (e.g. salmon breeding), etc.

Correct inclusion of the ecological factor – rare species value – into main economic parameters (e.g. gross income, gross return, national income) is necessary for correct understanding of Russia's development trends

There are three important aspects of tax system reformation at macroeconomic level:

- 1) increase the percentage of taxes on activities related to nature exploitation and pollution (as important causes of species population decrease) in the total amount of taxes. This would reflect the role of the natural potential in the Russian economy more adequately, and promote more rational resource use and subtraction of the natural rent for the public benefit;
- 2) taxation system greening – i.e. establish a single taxation system covering the whole nature-product chain – from primary natural raw to the final product. Taxation system must impose maximal taxes on first links of the nature-product chain (to 'suppress' nature exploitation) and diminishing taxes – for further links drawing near the final product stage (to stimulate high-tech, infrastructural, and processing branches of economy).
- 3) review and cancel subsidies damaging the environment and rare species (e.g. energetic, industry, transport, and agriculture).

It is necessary to strengthen the co-ordinating role of the state to realise ecological-economic policies listed above. It is impossible to resolve the issue of natural asset economic value increase without state regulation.

Rational and sustainable use of rare species with the overall goal to minimise their removal.

Main measures include:

- a) obtain maximal biological resources from the culture:
 - increase the productivity of existing cultures,
 - introduce new species into the culture maximally,
 - create new varieties on the basis of gene engineering achievements.
- b) replace natural materials with synthetic (subject to ecologically safe production, economy of energy and materials, and waste utilisation).

An effective system of rare species conservation economic instruments must be based on the following actions:

- approximate initial registration and assessment of existing rare species biological resources (e.g. exhausting and sustainable supply rates, national biological resource and land use reporting system);
- examination of rare species biological resources input into the national economy (i.e. consider biological resources in the national statistics, develop a methodology of inter-sectorial resource use input, collect information on physical characteristics of resources in particular environments and for particular utilisation purposes);
- develop a methodology for valuation of non-commercial rare species biological resources important for the country;
- examine economic productivity of various ecosystems with further assessment of relative benefits of rare species biological resources;
- consider rare species biological resources capital resources and invest funds accordingly to prevent their exhaustion;
- achieve sustainable resource use goals;
- consider needs of local communities, which welfare depends on biological resources;
- develop regional economic rare species conservation responsibility structures (rare species living in protected areas are the federal property, but buffer zones and National Parks are open for everybody and must be controlled, for instance – through transfer of user rights to certain organisations or local authorities imposing responsibilities for most valuable biological species); owners of lands inhabited by rare species must provide information on their registration and protection;
- provide incentives for rare species conservation;
- provide incentives for local communities and involve them into rare species conservation;

- ensure correct understanding of incentives; use anti-incentives;
- develop and test rare animals and plants economic valuation techniques;
- arrange economic valuation of rare animal and plant species included into the Red Data Book;
- include an economic chapter into the Ecological-Economic Cadastre of Protected Areas, develop filling in techniques for it;
- develop a technique of land section cadastre cost assessment considering presence of rare species, and a technique of land section cadastre cost assessment in protected areas to use this parameter in State Land Cadastre development and maintenance (works on methodological provision of land assessment are already launched);
- economic valuation of protected areas and their natural components to include these parameters into the Cadastre of Protected Areas and the State Land Cadastre;
- publish guidelines on economic valuation techniques for rare animal and plant species, biodiversity resources and other biological resources.

Economic instruments leading to removal of rare species from Red Data Books must be aimed at limitation, neutralisation and/or elimination of limitation factors.

For instance, quotas of rare species removal; financial valuation of lands, forests and water objects considering rare species and damage inflicted to them; sanctions –penalties, anti-poaching actions, obligatory withdrawal (acquisition) of areas of critical ecological significance; incentives – low-cost licences on common species trade; rewards for zapovedniks and local authorities, restriction of private user/owner rights, reduction of (local) income tax considering input into rare species conservation, merit badges and rewards for lawful hunters (hunter “eco-labelling”), rare species conservation and partial cost compensation agreements with landowners, land exchange, permissions from authorities on removal and sale of some rare species individuals (e.g. ill, weak, etc. animals) and use of revenues for rare species conservation. Relocation of constructions and transport roads, imposing compensation charges on their owners. Consideration of rare species presence during insurance, rise of prices on agricultural chemicals; quotas on poison use.

Rare species consumption by poor people for survival purposes can be reduced, primarily, through their welfare improvement, and with regards indigenous nations – through rare animal and plant species removal quotas.

In addition, it is possible to transfer game and protected areas into limited private ownership, including opportunities to gain some economic profit. Foreign experience demonstrates that indigenous people often collaborate with national park authorities in anti-poaching activities.

If a new protected area is designated and land owners are willing to stay on their lands, the practice of acquisition in return for some land user function restriction without movement is applied. Some landowners' activities on natural biocenose maintenance may be contract

conditions – often in their own interests. This strategic approaches must be considered during Russian Land Code development.

Increase of particular species relative value must be considered during evaluation of investment projects related to nature use.

Industrial techniques of rare species population restoration are used to reduce pressure on them in natural ecosystems (fur animal farms, fish farming, ginseng cultivation, etc.)

Make investments into ecological education, particularly, to improve ecological ideology reducing illegal removal of rare species

Transfer of ecological objects with rare species into joint-stock property and publish conservation bonds – it is necessary to introduce full-scale payments to conservation enterprises for indirect effects of their activities and natural object maintenance. It is necessary, first of all, to assess the created public value and develop appropriate standards. Private stockholders must not have controlling interest, their rights to manage rare natural resources must be restricted by conservation enterprises.

4.4 Financing the Strategy

The financing objectives of the National Rare Species Conservation Strategy include:

- promote capital investments into rare species research and conservation including ecological, economic and social benefits of such investments and scientific staff training;
- ensure access to appropriate technologies to extend existing opportunities to resolve conservation issues (e.g. a loss of biological diversity and emergence of rare species) significantly;
- allocate funds for ecological education of population (e.g. create ecological culture and delicate public attitude towards rare species), including knowledge of each species value and its biological and ecological features (i.e. basic knowledge and understanding of species survival in natural conditions; anthropogenic impact on species and population condition; and actions necessary to ensure conservation of particular species).

The following financing sources and economic incentives can be used to implement these objectives:

- budget funding of all levels (e.g. federal, regional and local);
- ecological funds;
- new and additional funding sources including international funds:
 - part of rent (profit) from mining (i.e. exploitation of non-renewable natural resources by mining companies);
 - part of revenues from selling renewable natural resources (mainly – food industry and agriculture);

- part of revenues of companies 'exploiting' natural resources, sometimes – without their consumption (e.g. tourism agencies);
- poaching penalties;
- charitable donations from businessmen (including appropriate legislative incentives, for instance – by making such donations tax-free);
- ecological restructuring of interior and exterior debts;

Ecological conversion of Russian external debts could be used as a funding source for rare species conservation. Accumulation of interior debts (e.g. debts owed by federal structures to regions, debts between regions, etc.) and exterior debts (owed by the federal government, regional administrations, etc.) is typical for Russia. Many such debts are bad, but instead of their simple writing off, it would be possible to set that only part of a debt must be written off, another one – paid, and the third part of the debt must be 'paid' through conducting appropriate rare species conservation actions after confirmation from the creditor. This practice is wide-spread in international relations (e.g. such European countries as Poland and Bulgaria use it) for some extent – in Russia (for instance, annulling of pollution penalties for conservation actions on enterprises).

- foreign and domestic subventions/grants, privileged credits, subsidies for interest payments, shared funding, joint international projects, and export credits;
- profits from capital investments made by protected areas;
- admission fees of zoos seaaquariums, National Parks, photo-hunting, distant (recreation) observation of rare species and their gatherings;
- infrastructural and tourism service allocations related to rare species observations (access roads to ecological tourism areas, car parking areas, feeding, publications, TV and radio programmes, feeding infrastructure, etc.);
- allocations from showpiece, picture, photo, and art exhibitions related to rare species;
- payment for rare species procurance, gathering and hunt licences;
- part of revenues from regional biological resource exploitation, for instance – sale of local plants and animals, tame of wild animal species, tourism development, etc.
- increase of penalties for rare species poaching, measures on local welfare improvement, especially – in areas inhabited by rare species;
- additional payment for irrigation and hydroelectric water use if water sources are located in protected areas;
- specific taxes, for instance, for forestry, sale of timber and wild animals, concessions, environmental tax for building projects of dams, irrigation systems, roads, etc.;
- obligatory charges (up to 10%) on large-scale economic projects (e.g. water economy projects); charges on resource use concessions; charges on other concessions (e.g. hotels, restaurants, and tourism); donations from private companies and co-operatives;

direct financial support from technical assistance agencies, international organisations, and funds.

5 Case studies

5.1 Natural resource accounting for the oblast of Yaroslavl (north-east of Moscow)

(Final report was prepared for the Harvard Institute for International Development, USA, by G. Fomenko, M. Fomenko, A. Markandya, R. Perelet, July 1997)

- 1) Payments for use of natural resources do not play a significant role in formation of budgets of the Yaroslavl region and municipal counties.
- 2) Active federal legislation gives rather limited opportunities of differentiation of payments for nature use at regional and local levels. In the majority of the acts questions of guards of especially protected natural territories and zones with increased human-made load are not elucidated.
- 3) Charges for the use of many natural resources are not levied at all. For example, there are no charges for use of hunting and fishing resources. The payment is included in the structure of the profit taxes according to economic performance of enterprises.
- 4) Charges for gathering non-timber forest plants outside the wooded areas, and for production of animals not belonging to the category of hunting animals have not been firmly set yet. Charges for recreation resources (except for holiday areas in forests) are not established.

Many of these questions can be handled at the level of members of the Russian Federation. At the same time, these opportunities are not fully used by government authorities in the region and especially at the level of local self-management authorities. As a consequence, the amount of regional budget revenues relating to the use of a number of natural resources is extremely insignificant.

5.2 Selection of financial instruments to promote sustainable agriculture in Russia

(IUCN-CIS Programme “Sustainable agriculture and rural development”)

The Sustainable agriculture and rural development Programme supported by the government of the Netherlands and Russian private companies has been run by the IUCN-CIS Office since May 2000.

The elaboration of a financial strategy for achieving sustainable agriculture is an important output of the effort. The main ambition of the strategy is to involve finances of such agriculture sectors as:

- producers of agricultural machinery and agrochemicals,
- an agricultural produce procurement, processing, marketing network.

In both cases, finances are expected to be obtained from agribusiness and no longer from charity funds or government grants.

a) Specific context of the Sustainable Agriculture and Rural Development Programme

The Pan-European Biological and Landscape Diversity Strategy (PEBLDS) envisages lower human impacts on agro-landscapes. However, at present, grain yields in the Netherlands average 8100 kg/ha, while in Russia they reach only 1300 kg/ha which makes agricultural activity unprofitable results in the lack of efforts to conserve biodiversity, in the loss of long-term soil productivity since fertilizers are not used, soil erosion, silting of water bodies, groundwater pollution from cattle-breeding complexes, etc. The most dangerous trend is to give up agricultural activity and turn to wood cutting and selling timber to survive at below the market prices. Thus, in Russia, inefficient agriculture leads to the depletion of its natural resources.

Therefore, the IUCN-CIS Sustainable agriculture and rural development programme aims to find ways for agricultural producers to raise agricultural productivity and to develop a new market system infrastructure for environment friendly agriculture.

b) Ways of influencing agricultural producers in Russia

PEBLDS defines three directions of activity for conserving biodiversity being under the influence of the agrarian activity: legislative improvement, economic incentives and price reductions for high quality produce. These instruments work in Russia on a very limited scale.

Economic incentives according to the EU should include:

- agro-environment schemes,
- cross-compliance,
- taxes on resource use.

Russia features some constraints to introduce them, such as:

- budget deficit,
- high level of the corruption,
- lack of the effective ecological control,
- low tax collection rate,
- low agricultural efficiency.

Russia's National Environmental Action Plan (NEAP) suggests using "equity (shared) financing".

Financial instruments for the Sustainable agriculture and rural development Programme – “equity financing” and the adaptation of “cross-compliance” to Russian conditions.

The “Sustainable agriculture and rural development” Programme began searching for funds in the private sector to finance its projects. The particularity of this action is that the projects are presented as a package of different business proposals aiming at agribusiness expansion in the direction of its greening. The expansion will be achieved by geographically wide project activities and project supporting PR-campaigns. The funding party becomes, thus, a venture investor. Thus, the “shared financing” by an agricultural produce procurement, processing, marketing network and producers of agricultural machinery and agrochemicals (they both strongly depend on the state of natural resources and agriculture per se) makes the above NEAP mechanism the main financial tool of the Program.

As to the ways to use the invested funds, they are close to the mechanisms of cross-compliance Pan European strategy. The mechanisms of the Program can be expressed in the following way: ecological certification of land use technologies - in exchange for the marketing information and investments. It differs from “cross-compliance” in the way that, instead of a straight line of disbursements, ecologically friendly farms get an easy access to the market.

Here is an example of project activity through engaging the finances of private companies, which make ecologically friendly agro technologies (for example, the interrow cultivator, which allows to avoid using herbicides; and a drip sprayer).

1st stage: Demonstration of advantages of proposed agro technologies from the position of socio-economic and ecological efficiency, with a particular model farm as an example.

2nd stage: Dissemination of the experience gained in target regions, as well as in management and business structures.

3rd stage: Help to adapt technologies to the conditions of Russian agrarian market with low purchasing power in order to raise it and then conquer it. One of the possibilities is to create joint ventures to implement sustainable technologies and produce the necessary equipment.

The introduction of technologies should start with mundane culture of land use. Technologies themselves cannot be the goals per se - their introduction should be accompanied by special work with public participation.

The financing of the projects can be in the form of providing services for the technology producers.

One of the most perspective areas is attracting major agricultural produce distributors, operating in the Russian market. The purpose of joint projects is to set up information centers, which will work according to the above principal: “marketing information and investments in exchange for ecologically friendly activities”. For the investor, information centers will play a role of regional dealers; for the Programme they are the promotion centers of ecological thinking. The perspectives of this work are promising since the work with investors that started recently have already caused appreciable interest from agribusiness.

5.3 Innovative instruments to secure off-budgetary financing for the IUCN-CIS programme "Vanishing World"

The fund "Vanishing World" has been established within the framework of current non-profit foundation "A Branch of IUCN - The World Conservation Union in the CIS countries" as special programme for financing the hotspots in the field of native threatened species conservation. At the first stage, the "Vanishing World" was planned as educational Programme and included a series of contests, TV Broadcasts, exhibitions of best works, concerts with children's creative groups and winner's ceremony in 2000. Among people and organisations, who supported the programme, there was an ambassadress of the Royal Netherlands, a composer, actors, a singer, a representative of UNESCO International Confederation of Artists, as well as: interregional TV-radio company "MIR" ("World"), the publishing house "Machaon", the Moscow Zoo, Darwin's Museum in Moscow, a Business-club and many others.

In 2001, the "Vanishing World" Programme expanded to include contests, exhibitions, concerts with children's creative groups, charity concerts of musical groups, production of an ecological video and audio programmes, regional festivals and gala-concerts with a winner awarding ceremony.

The competition included the following nominations: the best drawing, the best photograph, the best handicraft, the best performance (Music, Drama), the best nature conservation initiative and the best School Project.

The festival "Vanishing World" drew attention of businesses and show businesses to the issues of nature conservation. The business will be given an opportunity to take a direct part in supporting nature conserving actions by delivering financial support for the fund "Vanishing World" to finance hotspots of native threatened species conservation as well as a children's group that were winners in nomination "The Best School Project" for implementing it.

5.4 Ecological insurance: a promising instrument for nature conservation

IUCN-CIS completed a project in 2000 aimed at promoting environmental insurance in Russia to help conserve nature.

Ecological insurance is about insurance of the liability of ecologically hazardous industrial facilities for causing harm to nature and natural resource users because of technological failures or accidents. Ecological insurance is employed in Russia in two forms: traditional and integrated. The traditional (direct) ecological insurance is exercised under the Federal law "About industrial safety of hazardous industrial facilities" that enacts the obligatory insurance of the liability for causing harm to life, health or property of physical and legal persons and environmental natural environment in case of failures at a dangerous industrial facility. Integrated (direct and indirect) ecological insurance is now introduced in Russia's regional laws "About mandatory ecological insurance". This technique has been successfully tried in 10 regions in Russia, including Moscow and Leningrad areas. The integrated ecological

insurance includes traditional (a second party liability) to which a third party (natural resource users) liability is added. Claims in case of an accident are made by:

- 1) the direct sufferer - to compensate economic harm to his (her) property and
- 2) from a local environmental control agency – to compensation expenses connected with restoration of initial properties of the affected environment.

If the enterprise was insured under a contract of integrated ecological insurance, and emergency pollution has taken place inadvertently, the insurance company (within the limits of the insurance amount) compensates both kinds of damage. Thus, the integrated ecological insurance places interests of the environment inside of economic interests of the society (community) and gives all business an appropriate protection. The work on development and distribution of the integrated ecological insurance is supported the Russian Academy of sciences, government environment protection departments, the ecological committee of Federal Duma (Parliament), regional administrations in Moscow, Leningrad, Kaliningrad and other areas of Russia, International Economic Committee for CIS countries, and the Institute for Sustainable Communities (within the framework of the project of the Replication of Lessons Learned /ROLL/ - USA).

Results of the project:

- A strategy of development of ecological insurance in Russia for the period 2000-2005 years and foreseeable future was outlined.
- A program of development of ecological insurance in Russia for the period 2000-2005 years was charted out.
- An international conference “Protection of environmental natural environment and ecological insurance. The international importance of the Russian experience” was held and its proceedings were published.

2. INTERNATIONAL INSTRUMENTS

The Role of Joint Implementation and Greenhouse Gas Emission Trading for Project Finance

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1 Basics of international climate policy

After long international negotiations, the Kyoto Protocol of 1997 was approved including legally binding emission targets for a basket of six greenhouse gases. These targets are differentiated and apply to most OECD countries and countries with economies in transition (the so-called Annex B). A novel feature is the use of a commitment period that runs from 2008 to 2012 instead of a single target year. The Kyoto Protocol defines national greenhouse gas emission budgets for industrialised countries for 2008-2012. The U.S. have to reduce their emissions by 7%, the EU by 8% compared to 1990 levels. The Protocol leaves open how these targets are reached. The possibility of allowing countries to credit emission reductions in other countries towards their national emissions targets has been discussed since 1991 when the U.N. Framework Convention on Climate Change (UNFCCC) was negotiated. After lengthy negotiations, four flexible mechanisms were included in the Protocol: emissions trading (Art. 17) in permits derived from the emission budgets (assigned amounts), Joint Implementation (JI) (Art. 6) and projects of the "Clean Development Mechanism" (CDM) with countries without emission targets (Art. 12). While CDM credits shall already start from 2000, JI only starts in 2008. The exact rules are to be defined at COP 6b in July 2001 at Bonn.

Currently U.S. opposition threatens the Protocol and it is not clear whether the EU will find enough allies to ratify the Protocol to achieve its entry into force.

From an economic point of view, it is efficient to give countries with emission targets a maximum of flexibility concerning the location of emission reduction due to the global mixing of greenhouse gas emissions. Thus, the cheapest measures should be taken first regardless where they take place. However, incentives for long-term innovation have to be provided to ensure that short-term savings do not lead to higher long-term costs and/or detrimental social-economic effects on the country where they take place.

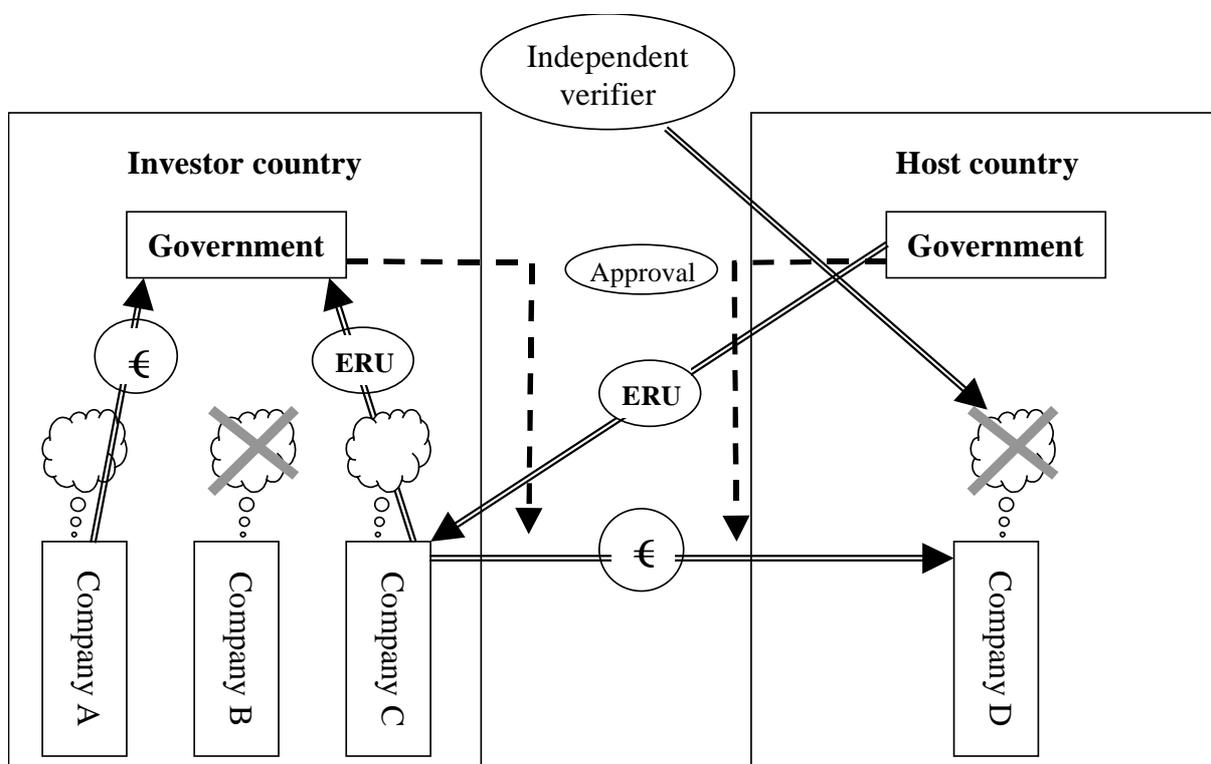
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2 What is Joint Implementation?

The basic rules for JI can be found in Article 6 of the Kyoto Protocol. Art. 6, 1 allows industrialised countries to acquire emission permits through investment in emission reduction or sequestration projects in other industrialised countries. The criteria for projects are the same as in the Activities Implemented Jointly (AIJ) pilot phase that is described below in more detail (Art. 6, 1a and b). Emission permits created in that way are to be considered equal to emission permits from emission trade under Art. 17 (Art. 3, 10 and 11). Emission permits (“Emission reduction Units”, ERUs) cannot be acquired if annual reporting requirements have not been met or the reports do not comply with the binding rules (Art. 6, 1c). If a review team has doubts about the compliance of the host country the permits shall still be tradable but are “frozen” until the doubts are resolved (Art. 6, 4). Currently it is unclear whether host countries which do not fulfil the reporting requirements should be allowed to do JI provided there is independent verification of the emissions reductions.

A necessary condition for JI investment by private companies is the existence of domestic climate policy instruments such as an emissions tax or an emission trading system against which the Emission reduction Units (ERUs) can be credited (see Figure 1).

Figure 1: How Joint Implementation works



Company A pays an emission tax while company B invests in emission reduction. Company C invests in a JI project abroad reducing the emissions of company D. Both governments

have to approve the project and negotiate the number of ERUs created. Company C then gets a tax exemption in exchange for the ERUs.

Rules for JI can be less stringent than for the CDM as the fact that both countries have emission targets means that even in the case of wrong calculation of emissions reductions, there will not be an extra emission. This of course only holds as long as no country overshoots its emission target due to the wrong calculation of ERUs. Thus strong compliance rules are needed.

3 Potential financial flows into countries in transition

The price of an ERU depends strongly on the demand and on the exact rules of the Kyoto Mechanisms. For example the solution of the question, whether Russian and Ukrainian surplus permits (so-called “hot air”) can be sold freely or are subject to restrictions will have an enormous impact on the market. The current market price estimate without any surprises concerning the rules lies around 5-10€/ t CO₂. The average price of the first ERUPT tranche has been at 8.5 €. The more stringent voluntary company emissions trading programmes such as those of BP and Shell have started with prices of 20 €/t but recently come down to 7-14 €. Market prices for grey permits in the U.S. are much lower at 1-3 €/t. Currently price transparency is very low and quality of offered permits varies considerably. Moreover, it is not clear which permits will eventually fulfil the international rules. If the U.S. does not ratify the Protocol, the demand for ERUs will be much lower than anticipated, leading to a downward pressure on prices.

4 Project types with benefits for nature protection

There is a wide range of JI project types, but only a few have benefits for nature protection. The category with the highest benefit is surely forest and wetland protection but here the definition of the baseline will be difficult. Afforestation and reforestation can be helpful if done in an ecologically correct way. Monocultures would clearly be counterproductive. Sequestration in soils may offer a way to preserve extensively used high-biodiversity non-forest lands. Forest management projects can help to implement modern forestry methods that allow an increase in biodiversity. Renewable energy projects can have a positive indirect effect by reducing the mining of fossil fuels with its related impact on nature. For example, a reduction in Estonian oil shale mining would have an enormous impact on nature conservation in large areas of Estonia. Capture and utilisation of landfill/wastewater methane can help in preserving aquatic ecosystems.

5 Institutional framework in host countries

It is unlikely that a country will develop a successful JI strategy without appropriate institutions. The setup of institutions takes time and costs money. However, the AIJ pilot phase shows that only those countries with clear institutional responsibilities could actually implement projects without long delays.

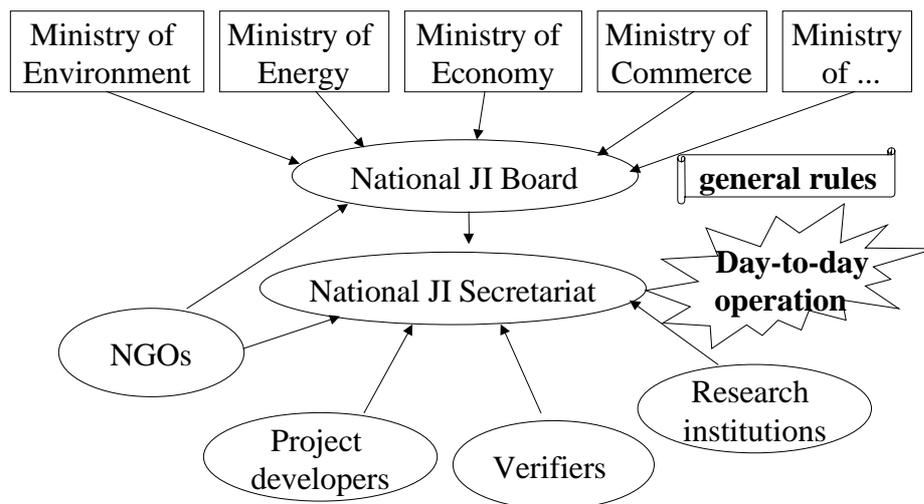


Figure 2: A recommendation for national JI institutions

The National JI Board would consist of representatives of ministries and have the task to define national JI groundrules, priority sectors and project types as well as setting of incentives and definition of ERU allocation. As a standing body, the National JI Secretariat would approve projects, market the host country worldwide and coordinate capacity building. It would also help in soliciting finance and host a website

5.1 First JI pilot programmes

Due to opposition from the developing countries against crediting of emissions reduction abroad, the 1st UNFCCC Conference of Parties (COP 1) in Berlin 1995 decided to set up a pilot phase for projects without crediting of the emissions reduction that was scheduled to last until 1999. These projects were termed AIJ. In the time between Berlin and Kyoto the opposition of major developing countries such as India and China against JI with crediting of emissions reduction hardened again many analysts thought that projects with crediting would ultimately – if at all – only be possible between countries with emission targets. Thus, the interest for AIJ concentrated on countries in transition.

While AIJ developed on the ground, the adoption of the Kyoto Protocol in 1997 had a major impact on the discussion of emission reduction abroad. A curious interaction of the U.S. and Brazil gave birth to the concept of the CDM, i.e. emission reduction projects with credits in developing countries. Astonishingly, there was no opposition from developing countries and it was stated that projects could already begin in 2000. Similarly, JI projects with countries with emission targets were allowed, but from 2008 only. As now the emission targets got a legally binding character, the attention towards these “Kyoto Mechanisms” was growing quickly. This had a twofold impact on AIJ. On the one hand, AIJ was seen to be an interim mechanism that would soon be supplanted by the Kyoto Mechanisms. On the other hand, AIJ allowed to gain experiences that could be used for CDM and JI development at a later stage.

When it became clear that the rules for CDM and JI would not be elaborated soon but became the centre of difficult negotiations that culminated in the failure of COP 6 in late 2000, the role of AIJ gained attention again. AIJ gave the chance to develop “mothballed” CDM projects and pave the way for agreements on JI projects. For example, the Netherlands have signed a letter of intent with Poland on AIJ projects that would be later converted into JI. The credit sharing was already agreed. It is not surprising that COP 5 in 1999 prolonged the pilot phase indefinitely (Decision 13/CP.5).

The political basis of AIJ rests on decision 5/CP.1 of COP 1. This decision states that

- AIJ must be compatible with and supportive of the relevant national environment and development priorities and strategies and contribute to cost-effective global environmental benefits and encompass all greenhouse gas sources and sinks.
- AIJ under the pilot phase requires prior acceptance, approval or endorsement by the governments of the Parties participating in these activities.
- AIJ must bring about real, measurable and long-term environmental benefits related to the mitigation of climate change that would not have occurred in the absence of such activities (additionality).
- Finance of AIJ projects has to be additional to Global Environmental Facility (GEF) funds and official development assistance.
- No Party may accrue credits to his own obligations from the UNFCCC with regard to GHG from emission reductions achieved by AIJ in the pilot phase.

As of September 2000, 143 AIJ projects had been officially reported to the UNFCCC secretariat. 38 countries are hosting projects while 12 countries have invested in projects. The following tables are based on the information provided by UNFCCC and classify the AIJ projects by investor and host countries.

Country	Number of projects
Sweden	52
United States	38
Netherlands	23
Norway	7
Australia	6
Japan, Germany*	5
France*	4
Switzerland	2
Belgium, Canada*, Italy	1

Table 1: Investor countries

* The same project has been reported by three investor countries

Country	Number of projects
Latvia	24
Estonia	21
Lithuania, Russia	9
Czech Republic, Hungary, Romania, Slovakia	4
Poland	3
Bulgaria, Croatia	1
Sum	84

Table 2: EIT host countries

The development of the AIJ phase over time is shown in Table 3. The extension from the countries in transition to the developing countries after Kyoto can be clearly seen. There is a big lag in host country approval. The list in *the Joint Implementation Quarterly* consistently shows about 30 projects more than registered with the UNFCCC secretariat.

Table 3: Development of AIJ over time

	1995	1996	1997	1998	1999	2000
Accepted projects	10	16	61	95	122	143
Projects actually being implemented*	0	3	13	60	86	n.a.
Investing countries	3	3	5	8	11	12
Host countries	7	7	12	24	34	38
EITs	5	5	7	10	11	11
Share of countries in transition in all projects (%)	60	50	74	72	65	58
Planned emission reduction (mill.t.CO ₂)**	23	111	140	162	217	366
Share in countries in transition (%)	56.5	39.5	32.6	31.3	24.3	15.6

* These are estimates as no reliable information exists. The implemented projects tend to be small projects in countries in transition.

** The emission reduction actually implemented is much lower (see previous note).

While in the beginning, forestry projects had by far the largest share of reductions, projects in the energy sector have taken a higher share in the post-Kyoto phase. The current distribution is as follows:

Table 4: Project types in EITs

Project type	Number	Reductions (million t CO ₂)
Afforestation	1	0.3 (costs 0.15 M€)
Forest preservation	2	10.7 (costs 55.7 M€)
Fugitive gas capture	3	31.2
Fuel switch	8	8.8
Renewable energy	28	2.1
Energy efficiency	42	7.1

The Netherlands plan to use JI in a comprehensive way. To avoid a challenge by the World Trade Organisation, they have developed the ERU Tender Programme (ERUPT). Companies offer amounts of emission reduction and the Dutch government buys the cheapest ones. A necessary condition is a Memorandum of Understanding with the host country government that the host country will eventually allocate ERUs in the amount specified by the contract with

the company. So far, such Memoranda exist with Poland, Slovakia, Romania and Bulgaria. In April 2001, the Netherlands allocated 36 million € for 5 projects in EITs that generate 4 million t CO₂ reduction. So far no sink project is included but there is a Polish afforestation project in the pipeline (15,000 ha, sequestration 137,500 t CO₂ p.a., costs 30 million €). Annual tendering is scheduled to remain at 35 million €.

Also the World Bank's Prototype Carbon Fund (PCF) is a pilot programme where 17 companies and 6 governments have pooled 180 million \$. Contributors, or "Participants," in the PCF will receive a pro rata share of the emission reductions, verified and certified in accordance with carbon purchase agreements reached with host countries. The PCF is endeavouring to achieve a balanced portfolio both geographically and technologically. Approximately half of the investments will be made in JI projects in EITs Renewable energy and energy efficiency projects are prioritised. No more than approximately 10% of the PCF's assets will be invested in sinks projects; so far not a single sink project has been financed by the PCF.

A lot of private banks have carbon funds at different stages of development. Several of them address sink projects, but mainly in developing countries.

6 Synergy between JI and nature protection?

Only a few JI project types have immediate benefits for nature protection. However, JI projects can help to afforest and to protect forests and wetlands. Experience from pilot projects has shown that investment can be substantial under the right framework. However,

there may be an incentive to plant monocultures to maximise the carbon sink. The baseline calculation poses problems. The financial revenue from ERU sales strongly depends on the future course of climate negotiations.

7 Further reading

Very useful information on the progress of AIJ/JI programmes and projects is found in the Joint Implementation Quarterly, published by Joint Implementation Network (JIN), Groningen, The Netherlands, and available online <http://www.northsea.nl/jiq/>

The official AIJ website with detailed reports of most projects and contact addresses of the national focal points can be found at <http://www.unfccc.int/program/aij/index.html>

Information on the Dutch ERUPT programme is available at:

<http://www.senter.nl/erupt/main.htm>, including the tender rules, baseline regulation and legal texts.

Details on the World Bank Prototype Carbon Fund can be found at:

www.prototypecarbonfund.org

Information on the BP internal emissions trading system is available at:

http://www.bp.com/key_issues/environmental/climate_change/emissions_trading/bp_et_system.asp

A Project Idea: Creation of New Forests in Bulgaria under Kyoto Protocol Mechanisms

Yeni Katsarska¹

Joint Implementation Unit, Bulgaria

Georgy Tinchev²

Ministry of Agriculture and Forests, National Forestry Board, Bulgaria

Under the Kyoto Protocol the European Community has committed itself to reduce the emissions of greenhouse gases (GHG) by 8 percent during 2008 – 2012 as compared with the emissions level in 1990. The Netherlands, as part of the EU, has been required to contribute to this task by reducing GHG emissions by 6 percent. It is the intention of the Netherlands to realize at least 50 percent of its effort to meet the Kyoto Protocol domestically. The other part will be realized by means of Kyoto Mechanisms. Joint Implementation is one of these mechanisms.

Joint Implementation (JI) is a mechanism through which initiatives aimed at GHG emission reductions are realised by one country on the territory of another country. Emission Reduction Units from these projects may be transferred from the host country to the investor country. In order to realize this, host country and investor country both approve the project as a JI-project and agree on joint reporting to the secretariat of UN Framework Convention on Climate Change (UNFCCC) that is in charge of verification of emission reductions realized. Through the Netherlands Emission Reduction Unit Procurement Tender (Eru-PT), the Netherlands wants to implement JI by providing funds for acquisition of ERUs and by providing a framework for approval and reporting obligations. Responsibility for JI in the Netherlands is with the Minister of Economic Affairs and the Minister of Housing, Spatial Planning and the Environment. The Ministers have appointed Senter Internationaal to implement JI through Eru-PT.

In 1998 Bulgaria signs the Kyoto Protocol under UNFCCC. The commitment is 8 % reduction of GHG referring to 1988 base line year. Since the Kyoto Protocol is not yet ratified by Bulgaria, the only option for the country to take part in the international trade with ERUs is the Joint Implementation mechanism. With that purpose on 10th April 2000 has been signed a Memorandum of Understanding between the Netherlands and Bulgaria. As follow up Joint Implementation Unit in Bulgaria has been established.

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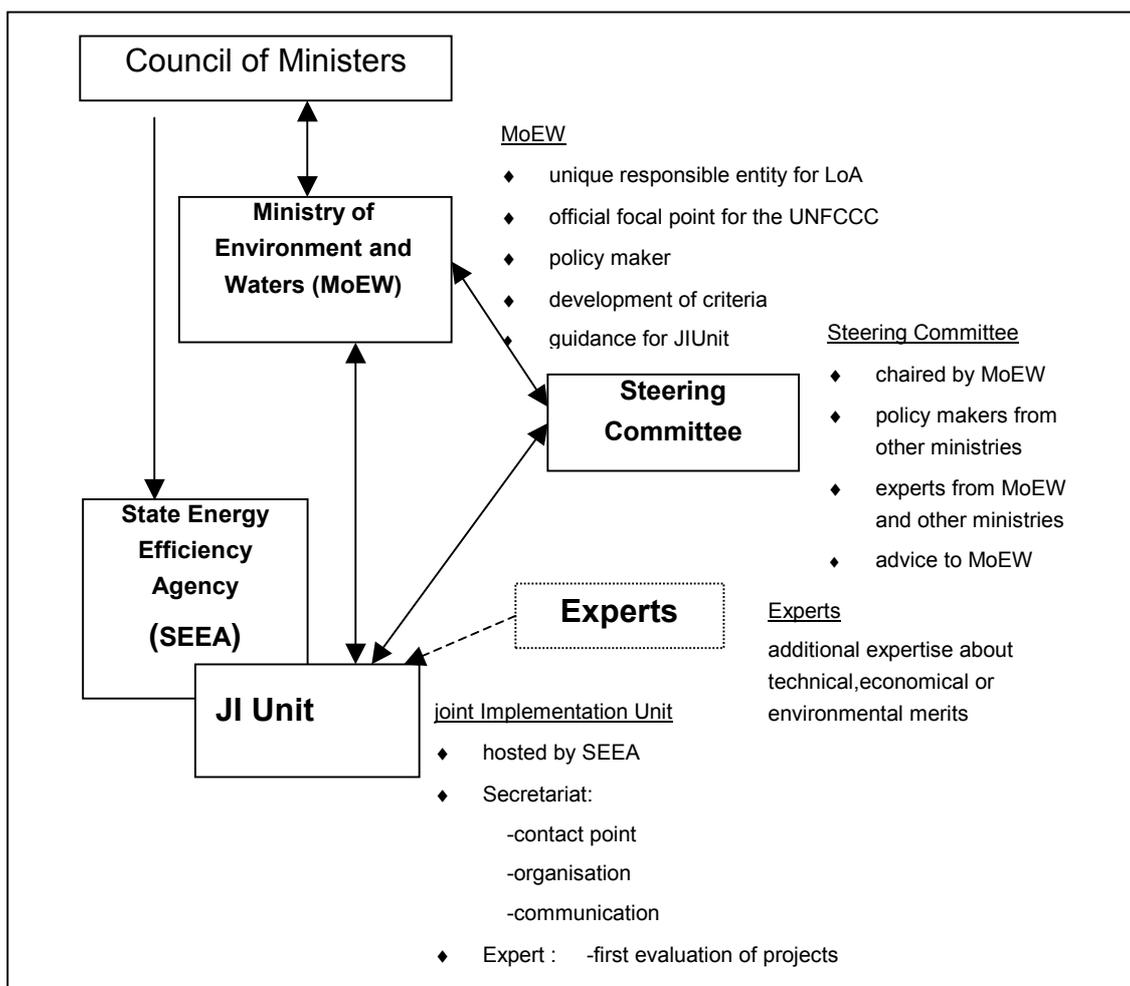
A Project Idea: Creation of New Forests in Bulgaria under Kyoto Protocol Mechanisms

The JI Unit is an independent evaluating unit, hosted by the State Energy Efficiency Agency and under the direct supervision of the Ministry of Environment and Waters. It is the "driving force" of the JI co-operation with the Netherlands and the contact point for Senter Internationaal, as well as the "knowledge" center on JI in the country.

The activities of the Unit's staff perform the provision of expertise in relation to ERU-PT and climate change. They consist of two main tasks:

- expert role for ERU-PT related tasks;
- promotional and communicational tasks.

The main task of the Unit is to evaluate the project proposals submitted to Senter Internationaal, and prepare an advice for decisions to the Ministry of Environment and Waters of Bulgaria. The staff of the JI-Unit assists in the development of project selection criteria, co-ordinates the JI activities with the Ministry of Environment and Waters, performs negotiations on credit sharing, and maintains close communications with the project developers.



A significant part of JI-Unit's responsibility is the promotion of ERU-PT scheme and creation of awareness on JI in general. The purpose is to increase the quality and the quantity of future Bulgarian projects submitted to ERU-PT. The promotional activities include provision

of detailed information on ERU-PT to local business communities, foreign companies active in Bulgaria, and other stakeholders such as NGOs, municipalities, Ministries, agencies, etc. The communication role of the Unit provides for organisation of meetings and workshops, participation in seminars and relative events.

One of the possible areas for development of projects for JI is the forestry sector of Bulgaria.

Some general figures give the following picture for the Bulgarian forestry sector:

- Total forest area- 3,899,655 ha, of which 3,371,269 ha (86.5%) is forested and 120,190 ha (3.1%) are not forested but suitable for afforestation
- Total wood volume: 456.7 mln. m³
- Average annual increment: 12.4 mln. m³
- Average wood volume per hectare: 85 m³
- Envisaged average harvesting per year: 4.8 mln. m³, incl. 2.4m³ from thinnings
- Average percentage of real harvesting: 76%
- Total afforested area for the period 1960 - 1995: 201,560.0 ha
- Average afforestation per year: 50.4 ha
- Nursery production: 150,000 seedling per year (average) of 95 species

On the basis of these figures a major conclusion can be made – there are enormous possibilities for afforestation and reforestation activities in the country.

Deforestation in some regions is also a fact. This is valid especially for lower parts of the country where the main land use is oriented toward agriculture. There are municipalities with forest coverage less than 5% (Average for the country is about 30%). Except agriculture, another reason for deforestation is the over-harvesting during last centuries.

Forest fires appeared as a significant threat for Bulgarian forests during last few years. It comes clear from the table below:

Year	Number of forest fires	Burned forest area, ha
1995	114	550
1996	246	2150
1997	200	777
1998	578	6967
1999	320	8291
2000	1710	57406

Prognosis for 2001 are even worse. As main reasons for the increased number of forests fires are considered global warming, existence of large areas conifer mono-plantations created in 60s and 70s of last century and weak fire prevention activities.

Since the timber processing industry is reviving after the collapse during last ten years, national and regional need for timber and forest products increases. Almost all processing capacities were privatized and new were created. New private

enterprises are quite proactive and efficient. Because of that timber demand increases constantly.

On that basis could be formulated the reasoning for preparation and implementation of forestry projects with regard to carbon trade in Bulgaria.

- Need for increase of Bulgaria carbon sink capacity

A lot of studies show that one of the most reliable carbon sinks is the long living vegetation. Establishment of new forests by afforestation and reforestation is a good opportunity for the country to increase its carbon sink capacity.

- Need for income creation for land owners

Restitution process in Bulgaria is almost finished. New private forest owners have to tackle the ownership challenge. In most cases they really don't know what to do with their property. Establishment of new forests can be a successful option for them to make benefit.

- Need for forested lands, wind breaks

Microclimate change due to highly decreased forest coverage is significant in some regions. Agricultural crops decrease due to the wind erosion in vast open areas. These adverse effects could be limited by wind breaks and careful landscape planning, which to include afforestation measures.

- Need for timber from fast growing species

Some of big timber consumers work mainly with timber from fast growing tree species – poplars, willows, acacia. On the other hand, fast growing tree species have very efficient carbon sink capacity.

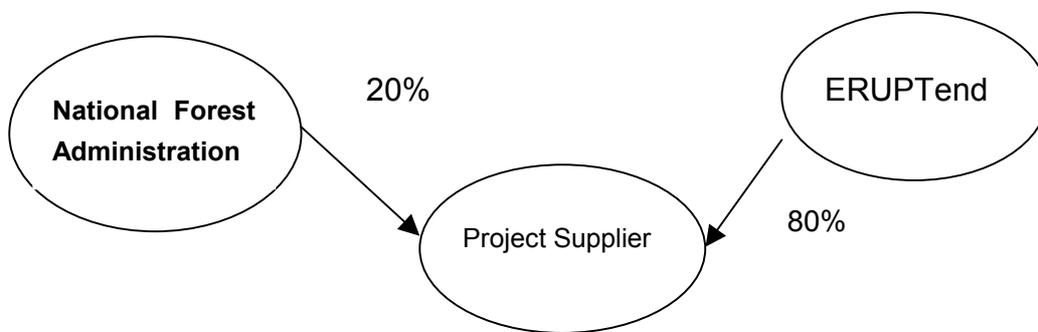
Project concept should be carefully developed in order sustainable implementation to be secured. Afforestation with native species will provide sustainable carbon sinks in long term. This approach is ecologically proved but the results will be achieved in not so near future. It is considered as more appropriate for bare state lands. Another approach is the afforestation with fast growing species. Its main advantage is that if it starts now, the first results will be achieved in the period 2008-2012, which completely fits into Kyoto Protocol requirements. Fast growing tree species could provide also revenues in a foreseen future. The only problem is that their creation could be in conflict with biodiversity conservation objectives of the forest management. Additionally, development of marketing strategy for forest plantation products will be of substantial importance. At first glance, this approach is considered as appropriate for bare private lands.

Finally, to develop and implement an effective project, additional works have to be undertaken.

It should include:

- Precise estimation of carbon sink capacity of the two different types of forests (fast-growing and native)
- Site selection based on detailed diagnosis of situation, problem analysis
- Development of Concept
- Identification of primary project areas, project targets
- Identification of project partners
- Estimation of costs and profits for private afforestation

A possible project scheme could be:



In this case National Forest Administration, which means the state budget, will provide 20% of necessary funding for the afforestation and reforestation activities. By this way the government will guarantee the project implementation. Project supplier could be any company in Bulgaria, which has capacity to do afforestation works.

The Global Environment Facility in CEE and Russia: A Guide to Developing Project Proposals and Synergies with EU Funds

Mihaly Vegh¹

European Centre for Nature Conservation, Hungary

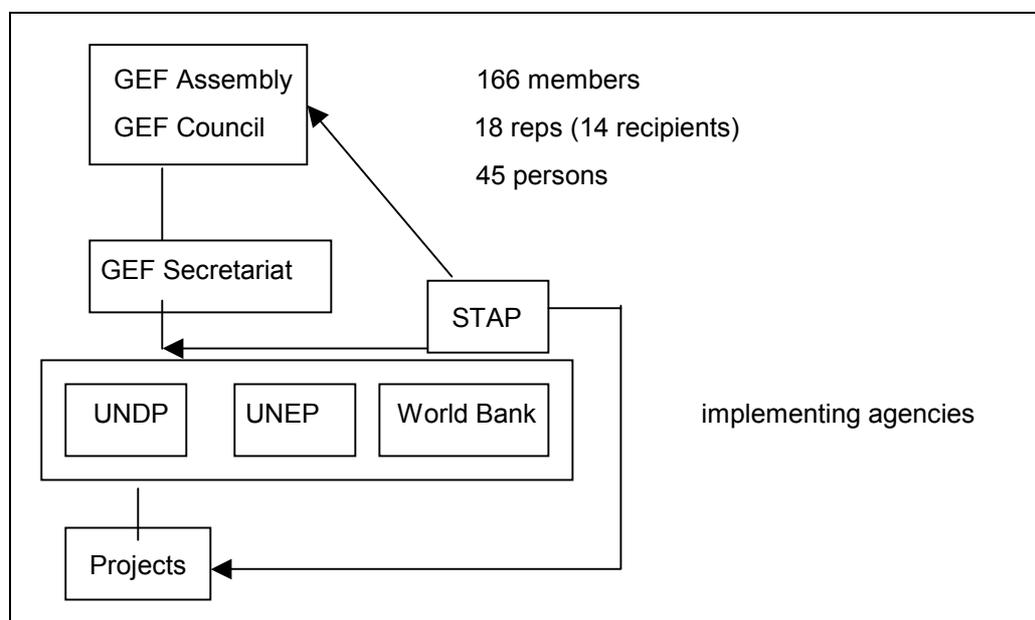
1 Global Environment Facility (GEF)

GEF is a co-financing mechanism bringing together GEF resources with those from Governments, banks, NGOs, bilateral and multilateral agencies to address:

- Biodiversity
- Climate change
- International Waters
- Ozone Depletion
- Land degradation as it relates to these Focal Areas

GEF projects address the global environment within the framework of country priorities.

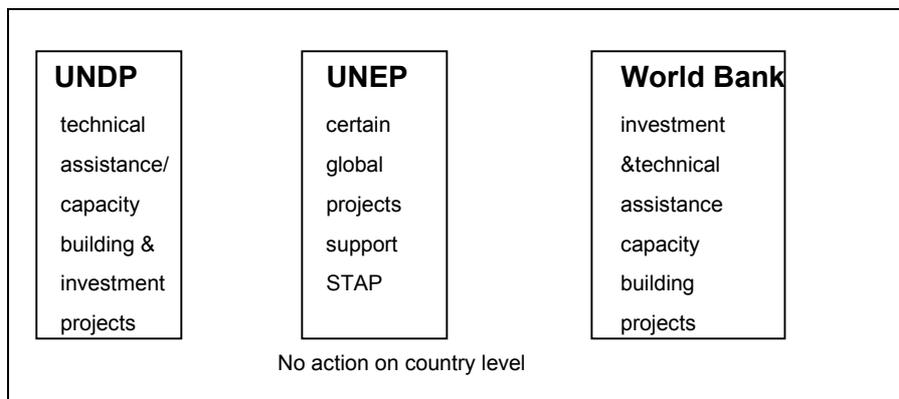
Box 1: GEF operational framework



¹ Költö u. 21, 1121 Budapest, Hungary, e-mail: ecncdb@elender.hul

Box 2 shows the partners help develop and implement projects.

Box 2: GEF Implementing Agencies



GEF executing agencies with shared responsibility for GEF Project Cycle Management

- African Development Bank
- Asian Development bank
- European Bank for Reconstruction and Development
- Inter - American Development Bank
- FAO, UNIDO and others

Projects can also be executed by:

- Government Agencies
- UN specialized agencies (FAO, UNIDO)
- Non-Governmental Organizations (mainly MSPs)
- Bilateral Development Co-operation Agencies
- Others from the private sector/institutes

(GEF prefers that the Executing Agency/Institute as much as possible to be a local organisation)

- GEF projects can be submitted by GEF
- Governments
- National institutions
- Local communities
- Non-governmental organisations
- Academic institutions
- International organizations

Thinking over the first steps

Conventions are providing guidance to GEF. The World Bank has field offices in almost every country. UNDP has representatives in recipient countries.

Study requirement of different conventions

- UNDP prefers previous consultations
- Consult also country offices

Through this one can get help, support, filter.

1.1 GEF focal points

Each country participating in GEF designates government focal points responsible for GEF activities

A Political focal point - matters related to GEF governance

- Responsible for matters related to GEF governance
- May participate in GEF Council meetings
- May be GEF Council members
- Communicate with their Constituency Council member
- Receive Council documentation and communication regarding GEF policy and the GEF programme

B Operational focal point - project related matters

Responsible for:

- acting as the principal contact point for all GEF operations in the country;
- reviewing project ideas and concepts:
- endorsing their consistency with respect to national priorities policy and programs and the country's participation in UN FCCC or Convention on Biological Diversity (CBD)
- confirming their governments commitment to the project (possibly financial)facilitating project related consultation, and
- providing feed back on GEF activities.

GEF support to focal Points through an IA:

- Ensures Focal Points receive GEF documents and materials
- May be used to establish a reference
- May be used for country level co-ordination meetings
- May be used for training courses, field visits, seminars, etc.
- May be used for translation

- It is limited to an annual maximum of 8.500\$ in the first year and 8.000\$ per year thereafter. (This is a new mechanism.)

GEF's three main focal areas and 13+ Operational Programmes (OPs) are Biodiversity (5 Ops, Climate Change (4 OPs) and International Waters (3 OPs).

1.2 The GEF and the global environmental conventions

GEF is the designated “financial mechanism” for the CBD. Within this context a number of other international conventions are directly related e.g. Ramsar Convention, Bonn Convention, etc. There are also strong linkages with the Convention to Combat Desertification and UN Framework Convention on Climate Change.

As the financial mechanism for the CBD the GEF provides funding for projects in eligible countries that work toward the goals stated in the CBD. The GEF finances only the agreed Incremental Costs of projects. Co-financing for non-incremental activities must be obtained from other sources. (eligible = ratified CBD and is eligible for loans from World Bank or UNDP)

CBD Objectives are:

- Conservation (to conserve the diversity of all biological resources)
- Sustainable use (to ensure that countries use their biological resources in ways that are sustainable in agriculture, forestry, fisheries, etc.)
- Equitable sharing (to promote the fair and equitable sharing (to promote the fair and equitable sharing of genetic resources (between and within countries)

There are two fundamental principle of GEF assistance. In the first place the principle of global benefits in biodiversity. This is assessed on the basis of:

- uniqueness, endemics
- recognized international significance (Ramsar)
- severity/imminence of threats

Secondly the principle of incremental costs, i.e. national interests are not paid by GEF.

GEF Biodiversity projects have to...

- address globally significant biodiversity
- remove the threats to biodiversity loss

- use the GEF resources only to cover the incremental costs (and leverage significant co-financing)²
- be ecologically, socially and financially sustainable³
- fit in one of the GEF categories (Operational Programs, Short-Term Measures, Enabling Activities)

1.3 Biodiversity Operational Programmes (OPs)

On basis of ecosystems there are initially 4 OPs:

- OP.1: Arid and semi-arid ecosystems
- OP.2: Coastal, marine and freshwater ecosystems (including wetlands)
- OP.3: Forest ecosystems
- OP.4: Mountain ecosystems

And two new OPs:

- OP.13 - Agrobiodiversity (in preparation) - new Biodiversity OP
- OP.12 - Integrated Ecosystem Management - new Multi-focal Area OP

The objectives are conservation and sustainable use but no species programmes.

The outputs OP.1 – OP.4 Projects are:

- protected areas (strengthening management)
- threat removal
- sectoral integration
- sustainable use
- institutional strengthening, capacity building

You always have to think in OPs because they are the context!

Short - Term Measures lie outside the regular GEF Operational Programmes but:

“are opportunities that are too good to miss”

Biodiversity Enabling Activities

Funding up to 350.000\$ are available for:

- stock-taking of biodiversity
- identify country specific priorities
- preparing national strategies, action plans (BSAP)

² the more co-financing you have the better

³ hardly second round

- provision of information & reports to CBD

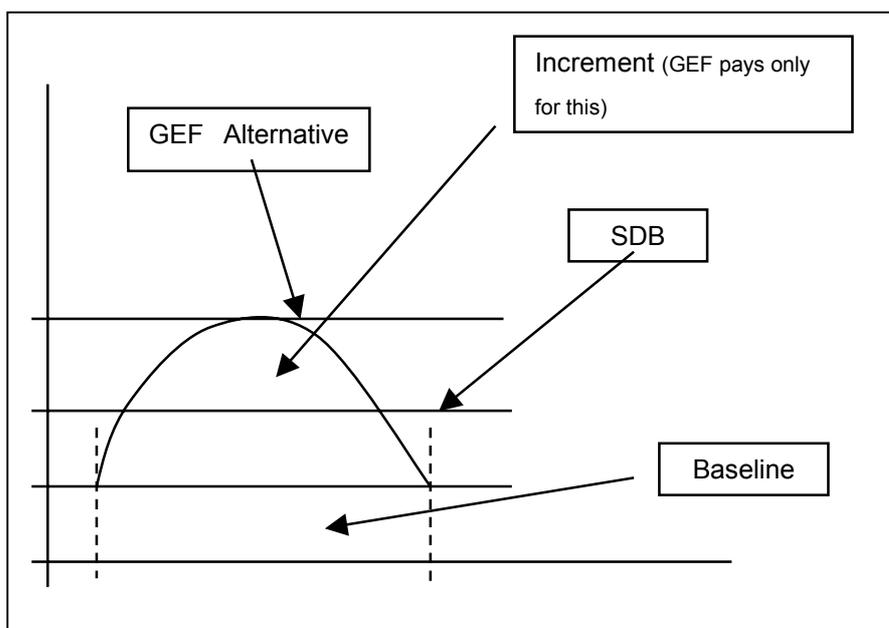
Additional funding of up to 100.000\$ for:

- assessing capacity building needs and CHM (No co-financing required.)

1.4 Incremental costs and biodiversity projects

Business as usual is called the baseline → biodiversity is lost. The GEF Alternative is where the rate of biodiversity loss is reduced. It may be achieved by carrying out new activities (complementary), or changing existing ones (substitution).

However, it is assumed that some of the activities within the Alternative are directly in the national interest. These should not be funded from GEF but from other sources. GEF calls this the sustainable development baseline (SDB). GEF can only assist in financing the difference in costs between the sustainable development baseline and the GEF Alternative the Incremental Cost.



Box 3: Incremental costs

1.5 GEF Funding Categories

- Full size projects (\$1 million and up)
- Medium-sized projects (up to \$1 million) MSP
- Financing can be available for preparing projects
- Small Grants Programme (up to \$50.000 each)
- Enabling Activities (up to \$450.000 per country and per focal area)
- Project Development Funds (PDF-A up to \$50.000 PDF-B up to \$500.000)

(In kind services can be considered as co-financing.)

2 How to get started?

Consult the web sites:

- www.gefweb.org
- www.undp.org/gef
- www.worldbank.org/environment

Call your UNDP contacts

Discuss with your government Focal Point

Concept Paper length about 2 pages

Basic Project Cycle

- Develop “Project Concept Paper”
- Present the Concept Paper to UNDP
- Obtain preparatory financing (PDF)
- Develop Project Proposal
- Present Project Proposal to GEF
- Implement project
- Monitor and evaluate (during the whole cycle)

3 GEF project types

funding pathway	Funding level	Time required	Preparatory funding
Full project	\$ US 1 million and up	6-24 month	Up to \$ US 350.000
Medium project	\$ US 50.000 to 1 million	6-24 month	Up to \$ US 25.000
Small grant	Up to \$ US 50.000	3-6 month	Up to \$ US 2.000

Preparatory funding

a) *PDF A or Block A - up to \$US 25.000 funding is available for preparing a medium or full project proposal*

Use a PDF A to:

- assess possible project sites
- identify threats, root causes, barriers
- evaluate institutional frameworks
- bring in outside expert if needed
- meet and consult stakeholders
- identify co-funding possibilities

b) *PDF B or Block B - up to \$US 350.000 funding is available ONLY for full size projects.*

Use a PDF B to:

- conduct feasibility studies
- undertake detailed assessment
- assess institutional and planning frameworks (for example legislation)
- make field visits and full consultation with stakeholders
- complete co-funding arrangements

4 “Filter” criteria for GEF funding

There are five “coarse Filter” criteria for GEF funding and “Fine Filter”.

4.1 “Coarse Filter” criteria for GEF funding

a) *The eligibility test*

To be eligible for GEF financing, a country must:

- have ratified the Convention on Biodiversity or Framework Convention on Climate Change
- be eligible for assistance from the UN system or the World Bank

b) *The global significance test*

Does the project idea deal with globally significant biodiversity, transboundary international water courses or reduction of greenhouse gas emission?

c) *The national priority test*

Does your project concept paper reflect national environmental priorities and commitments?

GEF Focal Point endorsement is a requirements - necessary at PDF A level.

(At this stage any governmental confirmation is enough.)

d) *The co-funding requirement*

Does the project concept has co-funding from other sources? If not, is there a good potential for creating co-funding partnerships?

Remember GEF financing is co-financing.

e) *The portfolio test*

Does the project idea has the potential to be a catalytic and innovative project in the overall GEF portfolio?

Learn about existing or planned GEF projects in your country (consult UNDP/World Bank).

4.2 The “fine filter”

Does the concept fit within one of GEF’s focal areas and their associated Operational Programs?

- Consider:
- focal area
 - ecosystem (for biodiversity projects)
 - project approach
 - project activities

Biodiversity Emphasis

- secure the in situ conservation and sustainable use of globally significant biodiversity at the intra-species, species and/or ecosystem levels
- secure conservation of agrobiodiversity (in agro-ecosystems and wild)

4.3 Development of a good concept paper

- Apply coarse filter and Operational Program criteria to project concept.
- Consult with people concerned with your project idea - the stakeholders. Develop support and participation.
- Write the concept paper.
- Secure written endorsement of concept from Government GEF focal point.
- Submit concept paper to IA

From project concept to PDF A

- Address comments of GEF reviewers
- Provide additional details
- Add new sections:
 - Part II - Information on PDF A activities
 - Part III - Information on Applicant Institution
 - Part IV - Information on Implementing Agency
- Add Annexes if necessary e.g. maps, work-plan, budget breakdown, etc.

PDF A Part I: Eligibility = Concept Paper

1. Project Name
2. GEF Implementing Agency
3. Country
4. Country Eligibility
5. GEF Focal Area
6. Operational Programme
7. Project linkage to national priorities, action plans and programs
8. GEF National Operational Focal Point review
9. Project rationale and objectives
10. Expected outcomes - for the whole project
11. Planned activities to achieve outcomes
12. Stakeholders involved in the project

PDF A part II: Information on PDF A activities

13. Activities to be financed by PDF
14. Expected outputs and completion dates (PDF A only)
15. Other possible contributors/donors
16. Total budget and information on how costs will be met (including PDF A)

PDF A part III: Information on applicant institution

17. Name
18. Date of Establishment, membership and leadership
19. Mandate/terms of reference
20. Source of revenue
21. Recent activities/programmes, in particular those relevant to GEF

PDF A part IV: Information on implementing agency

22. Project identification number
23. Implementing Agency contact person
24. Project linkage to Implementing Agency program(s)

Note: Part IV is carried out by UNDP/WB/GEF

5 UNDP possible commitment to implement a PDF A

- Assigning a “GEF expert”
- Assistance in launching the PDF
- Assistance in checking the TORs
- Short term follow up missions
- Log frame support (when applicable)...
- ...or assistance in the definition of objectives, outputs, activities, budget and timetable
- Assistance in developing project document
- Updates on case law (The way as GEF works)
- Timely comments to the project document
- Assisting in finding co-financing possibilities

A smooth implementation of a PDF depends on:

- A solid and detailed knowledge of the project site, including the “problem” and “potential solutions”
- A firm Partnership between the national and/or Implementing Institution and the Implementing Agency
- A smooth communication between the Implementing Institution, Country Office and HQ.
- A balanced choice of local and international expertise
- Good initial budgeting assumptions
- Sensible estimates in PDF timetable

6 GEF and Co-financing

- Co financing is money (cash or in-kind equivalent) that will be spent towards project objectives over and above existing budget.
- Up to 50% of co-financing in-kind contribution is accepted. No existing regulation on this matter.
- Today the question of in-kind contribution is a matter of trust (“One can lie once.”).
- UNDP and World Bank can assist in finding co-financing possibilities.

Potential sources of co-financing

- Governments (Federal and Regional)
- Ecofunds (Polish Ecofund)

- Development Banks (EBRD, ADB)
- Bilateral Agencies (CIDA)
- Multilateral (EU ISPA, SAPARD)
- Private Sector (BP, Norilsk Nickel)
- NGOs (national and international)
- Research bodies (universities, institutes)

7 Annex: List of UNDP environmental focal points

(for GEF-Projects as of September 2000)

Country	Name		Email	Telephone	Fax
Albania	Mr. Vladimir	Malkaj	vladimir.malkaj@undp.org	(35-42)33122/33148	(355-42)32075
Armenia	Ms. Anathit	Simonian	simonian@undp.org	(374-2)151-453	(374-2)151-552
Azerbaijan	Mr. Mahir	Aliyev	mahir.aliyev@undp.org	(994-12)980-581	(994-12)983-235
Belarus	Ms. Anu	Hassinen	anu.hassinen@undp.org	(375-172)274-876	(375-172)260-340
Bosnia-Herz.	Ms. Irene	Bernal	ibernal@undp.com.ba	(387-71)665-694	(387-71)665-681
Bulgaria	Ms. Dafina	Gercheva	dafina.gercheva@undp.org	(359-2)974-30-90	(359-2)765024
Croatia	Ms. Tanja	Rzehak	tanja.rzchak@undp.tel.hr	(385-1)371-2631	(385-1)371-2634
Czech Rep.	Mr. Daniel	Hanspach	daniel.hanspach@undp.org	(through Reg. Support Ctr., Slovak Rep.)	
Estonia	Ms. Heli	Kask	heli.kask@undp.org	(372)631-1496	(372)631-1399
Georgia	Ms. Ketii	Chachibaia	keti.chachibaia@undp.org	(995-32)251-126	(995-32)250-271
Hungary	Mr. Istvan	Tokes	istvan.tokes@undp.org	(through Reg. Support Ctr., Slovak Rep.)	
Kazakhstan	Ms. Zharas	Takenov	zharas.takenov@undp.org	(7-3272)642-618	(7-3272)582-645
Kosovo	Mr. H.	Ghaffarzadeh	h.r.ghaffarzadeh@undp.org	(381)38549066	(381)38549065
Kyrgyzstan	Mr. Adilet	Abdybekov	adilet.abdybekov@undp.org	(996-312)226-823	(996-312)660-557
Latvia	Ms. Rebecka	Kitzing	rebecka.kitzing@undp.org	(371)750-3600	(371)750-3601
Lithuania	Ms. Lina	Jankauskiene	lina.jankauskiene@undp.org	(370-2)223-111	(370-2)224-274
Macedonia	Mr. Rikard	Elfving	rikard.elfving@undp.org	(389-91)116-335	(389-91)118-261
Malta				(48-22)825-5785	
Moldova	Ms. Margareta	Petrusevschi	margareta.petrusevschi@undp.org	(373-2)220-045	(373-2)220-041
Poland	Mr. Przemek	Czajkowski	przemek.czajkowski@undp.org	(48-22)825-9245	(48-22)825-5785
Romania	Ms. Maria	Sandor	maria.sandor@undp.org	(401)211-88-55	(401)211-3494
Russian Fed.	Mr. Peter	Newton	peter.newton@undp.org	(70-95)956-4968	(70-95)232-2037
Slovak Rep.	Ms. Lykke	Andersen	lykke.andersen@undp.org	(421-7)59337-111	(421-7)59337-451
	Mr. Rastislav	Vrbensky	rastislav.vrbensky@undp.org		
Slovenia				(through Reg. Support Ctr., Slovak Rep.)	
Tajikistan	Ms. Nargis	Azizova	nargis.azizova@undp.org	(992-372)51-0084	(992 372)51-0021
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European Conservation Farming Initiative

Geert Posma¹

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1 Background

The Central and Eastern Europe (CEE) region as a whole demonstrates considerable potential for biodiversity conservation through conservation agriculture. There is a comprehensive system of protected areas, which frequently has farming activity within and/or immediately surrounding it. There are significant watershed systems (e.g. the Danube river basin) which are under agriculture and where conservation farming could play a major role in ecosystem conservation. Additionally, it is an area with high potential for agricultural productivity and economic viability under conservation farming practices. Lastly, we surmise that much of the farming presently is on a low chemical input basis, implying that ground contamination is relatively low and that conversion to conservation farming practice is relatively achievable from a biophysical perspective. This is because many of the individual farmers in the region find chemical inputs relatively expensive. However these farms are vulnerable to purchase from large farming companies who for the most part will promote chemical agricultural intensification.

The baseline situation is similar throughout the CEE region. Economically unsustainable low input agricultural systems will probably go one of two directions in the short to middle term: either to abandonment and the consequent loss of biodiversity, especially in the extensive semi-natural habitats; or, towards economically forced aggregation and the myriad of problems associated with intensification.

Fortunately, conservation farming presents a significant opportunity to enhance farm productivity and rural capacity to sustain livelihoods. Conservation farming methods that include the basic organic regulations as the baseline will allow farmers to acquire organic certification for their products and thereby access new markets and obtain better prices. Consumer demand in Western Europe is large and growing rapidly for a wide range of organic products. There is significant evidence that consumers are willing to pay considerable price premiums for organically certified products. In addition to these economic benefits, conservation farming methods will allow farmers to avoid the negative health effects of agrochemical usage and to improve their immediate local environment.

Conservation farming encompasses a wide range of techniques that will benefit biodiversity in the CEE region, for example:

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- crop rotation systems can increase both biodiversity in the wider ecosystem and agricultural biodiversity through the use of under utilised crop and animal varieties;
- incorporation of wild relatives of domesticated plants and animals into productive activities enhances in-situ conservation of important genetic material;
- green manure crops add organic matter to the soil that enhance soil quality, increase soil biodiversity and reverse the intertemporal degradation of agricultural land;
- low intensity perennial crop systems that create diverse habitats and encourage long-term development of complex, balanced and stable ecosystems;
- non-crop farm elements such as hedges, buffer strips, beetle banks, wooded areas and wind breaks serve as movement corridors and can harbour diverse populations of insects that function as pollinators, predators and food sources, as well as creating habitats for indigenous plants and animals;
- a “closed” system approach which relies on farm-generated fertilisers to displace energy-intensive chemical fertilisers, limits inputs to biodegradable materials, and places restrictions on off-farm produced feed thereby enriching on-farm agricultural biodiversity and minimising off-farm pollution;
- avoiding the use of pesticides, herbicides, and fungicides which protects watersheds and conserves a multitude of insects and soil flora and fauna.

Despite the promising potential for conservation farming in the CEE region, there are a number of barriers to implementation of the practices. Many farmers in the region, especially small-scale farmers, have limited understanding of basic business practices, no access to markets for organically produced goods, scarce access to capital, and little knowledge of the interaction of farming practices with biodiversity conservation. Often, due to the lack of government resources, many farmers have limited access to technical agronomic assistance. Farmers commonly have difficulty finding or affording extension services related to organic farming practices, let alone conservation farming methods that go beyond organic farming practices to provide additional benefits for biodiversity.

To address the needs of farmers and rural agricultural enterprises that are interested in converting to organic production in the CEE region, the Avalon Foundation, a Dutch-based non-government organisation (NGO), approached international Finance Organisation (IFC) in pursuit of IFC/GEF (Global Environmental Facility) financial assistance. Avalon has been actively involved in promoting organic farming in the CEE region for approximately ten years. Avalon wishes to identify the specific opportunities for conservation farming that would offer high conservation value in the CEE region and to design a set of project interventions to realise this potential.

Farmers in the region generally have little understanding of business practice, little knowledge of the interaction of the farming practice with conservation, little access to market for organically produced goods, and lack of capital. This project was set up with the aim to establish a support mechanism for SMEs (farmers, processors, etc) starting from their basic

address these needs together with the objectives of ‘green funds’ like GEF to preserve and develop biodiversity.

2 Vision of European Conservation Farming Initiative (ECFI)

At present, most of Europe’s farmland with high natural value is not under protection. Large categories like semi-natural habitats (semi-natural grassland, heathland, garrigue, etc), important bird areas (for breeding or migratory birds) and areas rich in landscape features (hedges, woodlots, etc) are covered by formal protection to only a limited extent. A considerable amount of farmland (approximately 20%) is currently managed under EU agri-environmental programs, but many of these programs are not yet well targeted on biodiversity and many areas of high conservation value are still lacking such measures. This situation is most acute in Central and Eastern Europe.

In addition to its vast natural areas, the CEE region contains a range of semi-natural habitats, most of which were created and are maintained by agricultural practices. These semi-natural habitats provide homes for a great diversity of endangered species, including many types of birds. These areas possess such a high degree of biological importance that the Intergovernmental Conference on Biodiversity in Europe, held in Latvia in March 2000, concluded that, “It is clear that Europeans can only meet the provisions of the Convention on Biological Diversity by further developing policy in the direction of an overall agri-environment strategy.”

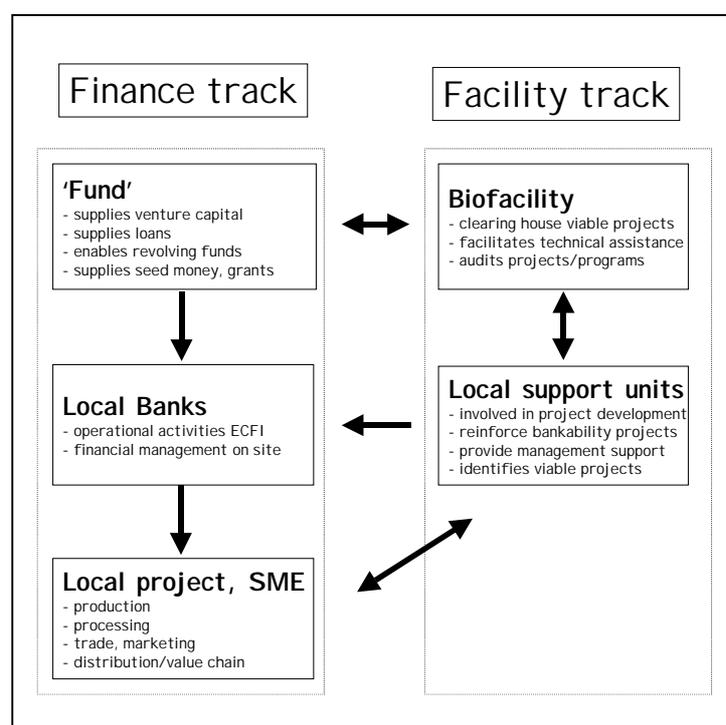
The need for agri-environmental initiatives in Central and Eastern Europe is immense because a significant portion of the region’s biodiversity is threatened by current and anticipated trends in the agricultural sector. It is feared that competition in the EU framework may cause intensification of farming practices, increased usage of agricultural chemicals, and abandonment of marginal agricultural lands that currently provide important ecological services, such as, control of the hydraulic cycle, generation and conservation of fertile soils and dispersal and breakdown of wastes and cycling of nutrients.

The goal of the ECFI is to conserve biodiversity in the CEE region by fostering a shift towards conservation farming in targeted ecosystems where significant contributions to enhancing ecosystem structure and function can be achieved and where agricultural biodiversity can be conserved. Ecosystem-specific farm practices will be identified to enhance the basic requirements of the local organic certification regulations and to replace existing practices that negatively impact biodiversity. ECFI will accomplish this by assisting farmers to define and apply conservation farming methods and by assisting rural agricultural enterprises to purchase, process and market organic products. The project will assist in the identification and development of markets for under utilised local varieties of crops and animals thereby enhancing the in situ conservation of agricultural biodiversity. It is anticipated that the farmers and rural agricultural enterprises will require both technical and financial assistance.

A considerable portion of the biodiversity in the CEE region that is threatened by such agricultural trends is located within wetlands. River valleys and their associated wetlands have historically been the earliest sites of agricultural development and continue to be the most exploited type of ecosystem. In general, the richest and most extensive wetland sites left in Europe are found in the CEE countries. However, recent intensification of agricultural production now threatens to destroy important sites through both catastrophic drainage and general pollution coming from the entire drainage areas. ECFI will focus its efforts in concert with national priorities to alleviate the effects of agricultural intensification in areas where they are most threatening to biodiversity and where conservation farming can make a significant positive contribution to biodiversity.

3 Features of ECFI

As appropriate based on needs, ECFI will assist farmers by providing agronomic support for organic production and conservation farming practices, in acquiring organic certification, in accessing new markets, and will provide training in basic business skills. ECFI will focus on providing the required assistance to rural agricultural enterprises where necessary to catalyse the organic products supply chain and to develop new distribution channels in domestic and export markets. In addition to technical assistance, the project will provide



needed financing for commercially viable businesses in the organic products supply chain. To provide these services, the ECFI project will establish two entities, a Technical Assistance (TA) Facility and a Financial Facility.

The **Technical Assistance Facility** will promote conservation farming practice. In order to reinforce economic viability, marketing assistance will be provided such as certification of organic production. Moreover TA aims to enhance the benefits for biodiversity of the baseline organic certification requirements by overcoming barriers

associated with a lack of information and technical skills for implementation of potential conservation farming practices.

The technical assistance (TA) facility will exist as a separate entity from the financial facility with a physical presence in the target areas. The TA facility will include Avalon and the World Conservation Union (IUCN) as active partners. IFC may serve as a Board member. The role

of European Bank for Reconstruction and Development (EBRD) is not yet defined, but will be developed. The various separate offices will have local participation through involvement of local NGOs, farmers' groups and local government. Each office will be set up to target the farmers within a specific ecosystem and will provide the appropriate technical services as needed locally. The TA facility, together with the farmers concerned will identify capital requirements and assist the farmers and other entrepreneurs in submitting financing proposals to the financial facility, which will be associated but which will probably have a separate governance structure.

The specific types of assistance that the TA Facility will provide to farmers and rural agricultural enterprises in each of the targeted areas will be tailored to the national priorities and local needs at each site. It is anticipated that the TA Facility may provide the following types of assistance through offices located at each project site:

1. Recruit farmers to convert to biodiversity-enhanced organic agriculture
2. Provide technical assistance to farmers:
 - Provide training to agronomists and farmers in methods and practices for integrating biodiversity conservation into farming
 - Provide integrated biodiversity/agronomic extension services to farmers
 - Provide training for farmers and rural agricultural enterprises in preparation of business plans and in management and other basic business skills
 - Identify and facilitate access to lucrative European and other export organic food markets
 - Assist in local marketing of organic products
3. Utilise existing resources where available and create new mechanisms as appropriate:
 - Collaborate with existing agricultural support institutions such as state and private extension services that are currently providing agronomic and other technical information to farmers
 - Collaborate with other programs to create or enhance mechanisms for funding the incremental costs of biodiversity benefiting practices on farms
 - Catalyse the development of committees of government officials, national, regional and local experts, farmers, land use planners, protected area managers, NGOs and community members to determine the practices and methods that can be implemented through biodiversity farm management plans to enhance both local agricultural biodiversity and landscape conservation
4. Identify under-utilised biodiversity important for agriculture such as local varieties of agricultural crops and animals and assist in the development of markets for these products

The **Financial Facility** aims to overcome the barriers to conservation farming and the processing and marketing of the products related to a lack of access to financing.

The financial facility is anticipated to consist of a central fund management capacity, in which various financial institutions would be partners, potentially including IFC, RaboBank, Triodos Bank, Raiffeisen AG, and if possible, additional local partners. RaboBank and Raiffeisen are co-operative banks with an established and extensive local presence in the region and have formally expressed interest in collaboration with ECFI. We have not yet considered how to involve Avalon in the financial facility and whether it would be necessary to involve IUCN in this facility. The objective would be to ensure competent commercial management but with mechanisms in place to guarantee the achievement of anticipated biodiversity benefits. The practices required to ensure this will be explored during the project development phase.

Although the specific types of financing that the Financial Facility provides in each of the participant countries will be tailored to national priorities and local conditions as identified during the appraisal process, it is anticipated that the Financial Facility may provide the following types of assistance:

- supply equity, debt and guarantee financing and other innovative mechanisms to underwrite risk, as appropriate, in order to stimulate commercially viable rural agricultural enterprises playing a key role in the organic products supply chain, for example, primary and secondary processors, marketing companies and distributors;
- provide conventional agricultural credit to farmers, where appropriate, to stimulate conversion to biodiversity-enhanced organic and other appropriate production methods;
- partner with local financial institutions investing in rural agricultural business enterprises;
- contribute to the extension of services from existing institutions, or create new ones if necessary, for financing the capital needs of the organic products sector.

4 Strategy

The project strategy of promoting the products of organic agriculture is key to the creation of long term economic sustainability. Demand for these products is not only increasing globally, but is doing so at an accelerating pace. Current events such as dioxin contamination in poultry, the on-going revelation of BSE in beef cattle, the rapid spread of hoof-and-mouth disease and concern about the long-term effects of using genetically modified organisms in the human food chain are all generally serving to raise consumer awareness about food production practices. Many consumers are shifting their basic purchasing strategies towards organic products and are willing to pay significantly more for these products. Price premiums will create incentives for farmers to adopt organic methods and enhance the economic viability of farms producing these products. Relative to western standard, the CEE countries have a very high proportion of the population living on farms and in rural communities providing support services to the farm sector. Romanian agriculture employs 37% of the total workforce at the upper extreme while the average for the CEE countries is over 22%; the EU

average is 5.1%. Providing rural opportunities for earning livelihoods on a sustainable basis addresses the need to integrate social and economic benefits into the ECFI project goals and forms the platform for ensuring the ongoing benefits to biodiversity.

Long term sustainability of the productive potential of agricultural lands is also a key project strategy. The Technical Assistance Facility will promote beneficial techniques such as soil-building rotational practices, cover crop and manure incorporation to add stabilising and enriching organic matter, and erosion control. The ECFI project will be designed to build long term local human and institutional capacity to provide technical assistance for training and demonstration of these and other conservation farming practices specifically recommended in each target ecosystem.

5 Implementation Strategy for ECFI

Collaborative Arrangements and Strategic Partnerships: Private investment for the agricultural sector, in general, has been very limited in the CEE countries. The ECFI project will partner with local financial institutions to provide required long-term, co-financed debt and equity investments to key businesses in the organic products supply chain and thereby develop local capacity to support this sub-sector. Publicly provided technical support to agriculture for organic production, let alone for conservation farming methods and practices, is not generally available in the CEE countries. The project Technical Assistance Facility will establish networks and partnerships in both the public and private sectors to provide these required services and to develop self-sustaining funding capabilities.

Identification and collaboration with larger companies involved with organic farming is an ongoing process and the potential links will be fully reflected in the project brief. ECFI will be co-designed with large foods companies globally and retailers, which have their own sustainability programmes.

Moreover the development process for ECFI is anticipated to lead to a business model that is open for participation of financial partners. Private banks, multinational banks and green funds are invited to participate in ECFI as partners.

6 Organic growth model

ECFI is started from the observation that farmers and other SMEs in the food production chain envisage dilemmas regarding preservation of biodiversity. These dilemmas are partly known and understood from projects in which the IFC and Avalon are currently involved. One example is the Symbio Impex company in Poland. Symbio's main objectives is to develop organic agriculture in the corridors and buffers zones of Poland in order to prevent the conversion of these areas to conventional agricultural farms employing high levels of chemicals. Symbio's activities are mostly limited to the corridors and buffer zones around the Parks of Poland. Biodiversity preservation and enhancement is one of Symbio's primary

goals. This company operates in buffer zones of protected areas producing fruit and vegetables. Symbio provides marketing facilities and technical support to related farmers such as organic certification, product development, training and education.

The knowledge of these business dilemmas and experience in solving these dilemmas is used to develop ECFI in an 'organic way'.

The organic growth model is also applied for regional development of ECFI. The project aims to be operational in the whole region of Central & Eastern European, in particular countries aspiring to join the EU. During development of ECFI the focus will be on Hungary, Czech Republic, Bulgaria and Slovenia.

7 Core Partners

Core partners in ECFI are:

- *Avalon Foundation* – promotes organic agriculture & sustainable rural development in central & eastern Europe.
- *International Finance Corporation* – invests in sustainable private sector projects in emerging markets; a division of the World Bank Group
- *IUCN* – assists societies to conserve nature; a global union of states, government agencies and NGOs
- *GEF* – provides grants to protect the global environment; works through the World Bank Group, United Nations Development Programme (UNDP) & United Nations Environment Programme (UNEP)

The **Avalon Foundation** has been active since 1991 in supporting sustainable rural development in transitional economies in Central and Eastern Europe. The work concentrates on reinforcing market development for organic products and agri-environmental policies. Avalons activities are tailored to the local needs by closely co-operating with groups of farmers, (networks of) NGOs in CEE countries and representatives from governmental organisations.

Established in 1956, IFC is the largest multilateral source of loan and equity financing for private sector projects in the developing world. It promotes sustainable private sector development primarily by:

- Financing private sector projects located in the developing world.
- Helping private companies in the developing world mobilise financing in international financial markets.
- Providing advice and technical assistance to businesses and governments.

IUCN was founded in 1948 and brings together 78 states, 112 government agencies, 735 NGOs, 35 affiliates, and some 10,000 scientists and experts from 181 countries in a unique world-wide partnership. Its mission is to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.

The **GEF**'s role in this project is to fund the incremental costs necessary to maximise the agricultural biodiversity benefits and the wider ecosystem biodiversity benefits to be provided by the Technical Assistance Facility. The GEF's resources will be utilised to:

- a) raise awareness and train agronomists and farmers in agricultural techniques that conserve and sustainably use biodiversity;
- b) assist in the development of markets and business opportunities for the products of conservation agriculture;
- c) enable access to innovative financing mechanisms, as provided by the Financial Facility, in order to promote private investment in biodiversity-friendly farming operations and the businesses that support them; and
- d) provide assistance to overcome production, marketing, and distribution barriers for the products of conservation farming systems. Co-financing from other sources will be raised to complement and leverage the GEF funding.

EU Assistance for Nature Conservation in Central and Eastern Europe and in the Russian Federation

Carlos Sunyer¹

TERRA Environmental Policy Centre, Spain

1 Introduction

Conservation needs are not the same all over Europe. In some areas, habitat restoration will be the priority while in others the maintenance of the existing low intensity farming practices. These differences may also occur within a same region.

Because of this the strategies for nature conservation are very different across Europe, and together with it their costs. For example, following the above mentioned examples, for habitat restoration the purchase of land, specific infrastructures and management actions maybe needed, while for maintaining farming practices the implementation of environmental standards, marketing operations or the improvement of productivity. Therefore, different funding instruments will be available for this wide range of actions.

Before giving an answer to the question of which is the most suitable funding instrument for an specific site, it is important to answer the following questions, which in some way they will lead to the implementation of a management plan:

- Which are the conservation needs in the area? ⇒ TARGETS
- Which are the costs of those needs? ⇒ COSTS
- Which are the main conservation priorities? ⇒ COST-EFFICIENCY

Money for nature conservation is a very rare resource. Because of this, if we want to be cost-efficient when using such a scarce resource, then we need to know the answer to those questions. Then, it will be time to search for the best funding instrument.

The intention of this paper is to give a short review of the existing EU funding instruments that can be use for nature conservation in the accession countries and other Eastern Europe countries. To go deeper on this issue, several web sites are given, together with a reference for further reading which can be download from the Internet.

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2 Available EU funding instruments

Among all the available EU funding, only Life is specific for the environment. All the other funds are aimed at socio-economic development (Table 1). Therefore, the management of these funds for nature conservation will depend on the degree of integration between nature conservation and other policies.

Table 1: EU funding instruments and beneficiary countries

Instrument	Beneficiary countries
PHARE	1
ISPA	1
SAPARD	1
INTERREG	1
LEADER	1
TACIS	2
LIFE	4
LIFE third countries	3



A

Accession countries

- Accession countries:** Albania, Bosnia and Herzegovina, Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia, Poland, Romania, Slovak Republic and Slovenia.
- TACIS:** Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgystan, Moldova, Mongolia, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan
- European Life third countries:** Albania, Bosnia-Herzegovina, Croatia, Cyprus, and the Baltic shoreline of Russia.
- LIFE Life associated countries:** Romania, Slovenia, Hungary, Latvia, Estonia (is an open list for accession countries).

3 PHARE

Aims: support the process of economic transformation and strengthening of democracy

Priority areas:

- achievement of stable institutions guaranteeing democracy
- a functioning market economy and the capacity to cope with the competitive pressure with the EU
- to take on the obligations of membership

Programmation: Is prepared by each country, taking on to account the priorities set out at the accession partnerships. The most important programmes are:

- *National programmes*, which is the most important, accounting for the 80% of the total budget.
- *Cross Border Cooperation*. Helps to overcome specific development problems of border regions, to encourage the creation of co-operation networks on both sides of the borders, and to overcome disparities in standards of living and growth at EU external borders. CBC programmes can be implemented together with EU Member States, or States. In the first case the EU contribution for the Member State will come from Interreg.
- *Programmes*: as TaieX and Twinning.

More information: <http://europa.eu.int/comm/enlargement/pas/phare/index.htm>

4 SAPARD

Aims: to support agricultural and rural development and help to implement the Acquis

Priority areas and programmation:

Each country prepares a rural development plan, taking on to account a menu of eligible measures provided by the regulation. Some of this measures are interesting for nature conservation depending on its implementation (Table 2).

How is the programme prepared?. Each country has to develop a strategy, considering the objectives of the accession partnership. It has to include objectives, priorities, the geographic area in were to be implemented, an evaluation of its economic, social and environmental impacts, and financial plan among other issues. Also, for each measure the final beneficiaries have to be identified, together with the final implementation system (direct subsidies, call for tenders, etc.)

More information: http://europa.eu.int/comm/agriculture/external/enlarge/index_en.htm

Table 3: Eligible measures for the SAPARD national programmes

Eligible measures	Interest for nature conservation
Investment in agricultural holdings	Farm improvement to prevent pollution in sensitive areas
Improving processing and marketing	Marketing of sustainable products from PA
Improving structures for quality control (food quality and consumer protection)	Improving quality of sustainable products
Agricultural production methods to protect the environment and landscape	Agri-environmental schemes (pilot)
Development and diversification of economic activities	Promotion of nature tourism
Renovation and development of villages, protection and conservation of rural heritage	Conservation of cultural landscapes
Training	Education
Forestry, afforestation of agricultural areas	Promotion of autochthonous species, Improvement of forests, Afforestation of sensitive sites
Land registers	
Farm management	
Technical assistance	
Land improvement and reparation	
Developing rural infrastructure	

Box 1: The agri-environmental schemes at the SAPARD plan of Hungary 2000-2006

Measure: Agricultural production methods designed to protect the environment and maintain the countryside

Management packages

- A Organic arable land farming
- B Extensive grassland
- C Organic or integrated orchards and vineyard farming
- D Wetlands
- E Demonstration farm package

They will be implemented on 15 pilot areas covering 399.579 ha.

5 ISPA

Aims: to prepare CEECs for accession in relation with EU standards

Priority areas:

ISPA budget for each country has to be equally distributed for transport and environment projects, aiming to comply with EU environmental law and Accession partnerships. Environmental projects should be targeted to main environmental problems: water and air pollution and waste management.

Programmation:

It works in a project by project basis, and projects must be over 5 million euro. Each country presents specific projects to the Commission for approval, and are finally implemented through a call for tenders.

More information: http://europa.eu.int/comm/regional_policy/activity/ispa/ispa_en.htm

Box 2: ISPA projects in Estonia 2001

Environment:

- Tartu Tunnel Collector project, K2
- Narva City Sewage Treatment Plant Rehabilitation
- Viljandi: Establishment of a central municipal wastewater plant
- Tallinn waste management: phase 1

Transport:

- Ikla-Tallinn-Narva section: Via Baltica road rehabilitation
- Technical assistance for rial projects

6 The structural aid programmation

To help the accession countries to be prepared for using the EU structural and cohesion funds and to optimise aid, the implementation of all these funding instruments have been brought together within a single framework, similar to that of the Structural Funds programmation.

Each candidate country has to draw up a National Development Plan, which will be annexed to its National Programme for the Adoption of the Acquis, which will be periodically updated to include the country's evolutions. It should include:

- An analysis of the candidate country's current situation, identifying the gaps between their regions and between itself and the EU.

- A description of an appropriate strategy to attain the development priorities in the area of economic and social cohesion
- An indication of the planned use and form of the EU financial contribution: PHARE-ISPA-SAPARD, etc.
- An environmental assessment
- A description of the planned measures to implement priorities.
- An indicative financing plan, the contribution of each fund, etc.
- A definition of the final beneficiaries

It is presented to the European Commission, and once it is approved funding will take place.

7 LIFE III

General aims: contribute to the development of Community environmental policy

It has three chapters:

- LIFE NATURE
- LIFE ENVIRONMENT
- LIFE THIRD COUNTRIES

For further information: <http://europa.eu.int/comm/life/home.htm>

LIFE nature

Objective: actions aimed at the conservation of natural habitats and of wild fauna and flora of EU interest

Eligible countries: those associated to LIFE (Romania, Slovenia, Hungary, Latvia, Estonia)

Life contribution: up to 75%

Beneficiaries: all kind of initiatives, public or private.

When to submit a project?: every year

Where to?: to the competent national authority

What projects can be co-financed?

Sites of international importance hosting priority habitats or species to the Habitats Directive; or habitat or species not present in the Community but classified in the Bern Convention needing specific conservation measures.

Sites of international importance hosting a bird species in Annex I to the Birds Directive or a migratory bird species present in the Community or a bird species not present in the Community but classified in Bern Convention as needing specific conservation measures.

Species in Annexes II or IV to the Habitats Directive or in Annex I to the Birds Directive or a species not present in the Community but classified in Appendix I or II to the Bern Convention.

Box 3: Life nature projects in Romania during 1999

- Conservation of an Euro-siberian-wood with oak (*Quercus robur*)
Life contribution: 80.000 € (75%)
- Conservation of the Natural Wet Habitat "The Bogs of Satchinez"
Life contribution: 127.000 € (75%)
- Integrated Management plan for the "Small Island of Braila"
Life contribution: 190.000 € (75%)
- "In situ" conservation of the Romanian Meadow Viper (*Vipera ursinii*)
Life contribution: 255.000 € (50%)
- Habitat conservation in the Bucegi National Park/Romania
Life contribution: 122.000 € (65%)
- Survival of *Romanychthys valsanicola*
Life contribution: 201.000 € (75%)
- Enhancement of Piatra Craiului National Park
Life contribution: 274.000 € (75%)

8 LIFE environment

Objective: innovative pilot and demonstration actions aimed at:

Eligible countries: those associated to LIFE (Romania, Slovenia, Hungary, Latvia, Estonia)

Life contribution: up to 50% in accession countries (30% if expected to generate significant income)

Beneficiaries: all kind of initiatives, public or private.

When to submit a project?: every year

Where to?: to the competent national authority

What projects can be co-financed? Projects aiming to:

- integration of environmental considerations into land use development and planning, including in urban and coastal areas
- promotion of the sustainable management of water
- minimisation of environmental impact of economic activities
- prevention, recycling and sound management of waste streams
- reduction of the environmental impact of products

9 LIFE third countries

Objective: contribute to the establishment of capacities and administrative structures needed in the environmental sector and in the development of environmental policy and action programmes.

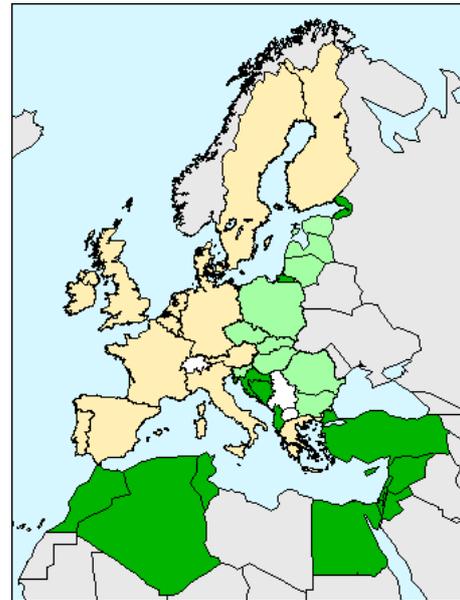
Eligible countries: (Albania, Algeria, Bosnia-Herzegovina, Croatia, Cyprus, Egypt, Israel, Jordan, Lebanon, Malta, Morocco, Syria, Tunisia, Turkey, the West bank and Gaza and the Baltic shoreline of Russia.

Beneficiaries: mainly national administrations, but open

Contribution: up to 70%

Eligible projects should:

- be in line with EC environmental policy
- correspond to the priorities decided at national environmental action plans
- be in line with:
 - United Nations Conference on Environment and Development (UNCED)
 - Environmental Action Programme Initiative for the Baltic (HELCOM)
 - Mediterranean Action Plan (MAP)
 - Bern Convention
 - Short and Medium-Term Environment Priority Action Programme (SMAP)



Eligible Life III countries in dark

Box 4: Examples of Life Third countries projects in Russia

- Comprehensive Action Programme Elaboration for the conservation of Biodiversity: CAPE Biodiversity - Technical Assistance

EU contribution: 220,000 € (70.68%)

Objective: to provide the regional administration with an operational control over changes in forest biodiversity, in order to adapt conservation policy in accordance with European and international conventions

- LenFauna, for the conservation of wild fauna and natural habitats in the Leningrad region - Nature Protection

EU contribution: 173,050 € (50%)

Objective: to provide data on the population dynamics of wild fauna forest-dwelling species by identifying in situ factors affecting their stability. Conservation requirements will be disseminated among professionals and the public.

10 TACIS

Aims: enhancing the transition process

Beneficiary countries: 13 countries of Eastern Europe and Central Asia: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Mongolia, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan (with Partnership and Cooperation Agreement)

Programmation:

- activities concentrated on:
- Institutional, legal and administrative reform;
- Private sector and economic development;
- Consequences of changes in society
- Infrastructure networks,
- Environmental protection,
- Rural economy,
- Nuclear safety.

Three types of programmes:

National: They identify priorities and areas of co-operation setting out the projects to be supported and the funding available, within the guidelines defined by the indicative programme.

Regional: Multi-country programmes are used for areas like environmental protection or the promotion of transport networks. *Cross-border* programmes have also been set up to promote the co-operation.

cross border network (transport, energy,..)

transboundary environmental initiatives (water & air pollution)

justice and home affairs

Environmental programmes will be concentrated on:

- Regional seas; Aral, Black and Caspian sea.
 - Environment for Europe process (technical assistance, etc)
 - Other regional actions

Small projects: A limited number of small project programmes are used to address very specific tasks (advice to governments in particular fields; or encouraging EU investment).

For further information: http://europa.eu.int/comm/external_relations/ceeca/tacis/index.htm

11 Other instruments

11.1 Leonardo Programme

Aims: promote innovative transnational initiatives for promoting the knowledge, aptitudes and skills.

Beneficiary countries: Member States and Accession Countries

For further information: http://europa.eu.int/comm/education/leonardo/leonardo2_en.html

12 Fifth framework programme for research, technological development and demonstration activities

Aims: to help solve problems and to respond to major socio-economic challenges facing Europe. To maximise its impact, it focuses on a limited number of research areas combining technological, industrial, economic, social and cultural aspects. It focuses on five thematic programmes:

- Quality of life and management of living resources, includes:
 - Sustainable Agriculture, Fisheries and Forestry
- Energy, environment and sustainable development, includes:
 - Global Change, Climate and Biodiversity
 - Sustainable Marine Ecosystems
- User friendly information society
- Competitive and sustainable growth
- Nuclear energy

For further information: <http://europa.eu.int/comm/research/fp5.html>

13 Further reading

Sunyer, C. & M. Végh (2000). EU financial instruments for accession and its use for nature conservation. An integration approach. ECNC. Tilburg. (The Netherlands) (ISBN 90-76762-07-4).

Available at: <http://www.ecnc.nl/doc/ecnc/publicat/finnccee.html>

3. NATIONAL INSTRUMENTS

Financing of Nature Conservation by the EcoFund Foundation

Marian Cieslak¹

The EcoFund Foundation, Poland

1 Introduction

In Poland funds for nature conservation are available from different outer and inner sources. Main inner source of financial resources are environmental funds established by law at each level of public administration:

- central level - National Fund of Environment Protection and Water Management,
- voivodship level,
- county level,
- commune level.

Ecological penalties, payments and fees for using environmental resources exploitation are main incomes for these funds. The majority of financial resources of environmental funds are spend for water management and air protection. Nature conservation projects are only a few percent of total budget. National Fund of Environment Protection and Water Management finance management plans and other projects in national parks.

The EcoFund Foundation is debt-for-environment swap based financial mechanism operating since 1992. Circa 25% of EcoFund Foundations budget is spent for nature conservation projects, including water quality protection in national parks and nature reserves. Other sources of funds available for nature conservation are:

- Global Environment Facility - operating since 1994 mainly for climate protection and biological diversity conservation - ca. 6.7 mln. USD spend for nature conservation projects,
- The Regional Environmental Center for Eastern and Central Europe - main expenditures for biological diversity conservation and ecological education and
- other sustainable development financial mechanisms, available mainly for other than nature conservation environmental projects.

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2 The EcoFund tasks and objectives

The EcoFund is a foundation established in 1992 by the Minister of Finance for purposes of effective management of funds obtained through the conversion of a part of the Polish foreign debt to the benefit of supporting environmental protection-related endeavours (so-called debt-for-environment swaps or eco-conversion).

The countries joining debt-for-environment swap mechanism with Poland are: United States, since 1991 - 370 mln. USD, France, since 1993 - 66 mln. USD, Switzerland, since 1993 - 63 mln. USD, Sweden, since 1997 - 13 mln. USD, Italy, since 1998 - 32 mln. USD, Norway, since 2000 - 27 mln. USD. The EcoFund is managing funds provided by all the aforementioned countries - a total of USD 571 million to be spent in 1992- 2010.

The task of the Foundation consists in the provision of co-funding for environmental protection-related projects not only of crucial importance on a regional or national scale, but also of major influence on the process of achieving environmental objectives recognized as priorities by the international community on a global as well as European level. Such EcoFund specifics, distinguishing the Foundation from other funds providing support to environmental protection-related investment in Poland, exclude the possibility of providing co-funding to endeavours targeting the solving of local problems only. Another task of the Foundation is the transferring of the best technologies from donor countries to the Polish market, as well as of stimulating the development of the Polish environmental protection industry.

3 The EcoFund structure

The EcoFund is an independent Foundation operating under Polish law, and of the 1984 Foundations Act (with subsequent amendments) and of its Statutes in particular. The Minister of the State Treasury is the current Founder. EcoFund Foundation authorities include the Foundation Council and the Management Board. Foundation Council members on the Polish side include representatives of the Founder, ministries, the Parliament and non-governmental organisations, as well as governmental representatives of all states who have decided to join the Polish debt-for-environment swap mechanism.

The Foundation Council is responsible for defining general EcoFund policies (determining the priorities, criteria, and principles of using Foundation resources), approving applications for grants from EcoFund resources for different environmental protection-related projects, and approving annual operation reports as submitted by the Management Board of the Foundation.

The Management Board of the Foundation is the executive authority, responsible for managing current Foundation business, and representing the Foundation externally. Moreover, the Board selects grant-eligible projects, and prepares applications to be submitted by the Foundation Council for information. The Management Board of the

Foundation is also responsible for the correct expenditure of any funds approved, and the timely settlement thereof by investors. In its everyday operations, the Management Board manages the office of the Foundation, staffed by experts from five environmental sectors:

- I - climate protection,
- II - air protection,
- III - water protection,
- IV - nature conservation,**
- V - wastes disposal,

as well as the financial section and accounting departments. Moreover, the Foundation uses the services of experts and consulting companies both in the technical (assessment of the various projects and the adequacy of completing any investments financed by the EcoFund) and formal (legal and financial issues) areas.

4 EcoFund priorities

In each environmental sector project's applications are evaluated according sectoral priorities. In the **nature conservation** sector, the EcoFund supports activities targeting the protection or reclamation of eco-systems of greatest value from the nature conservation standpoint, and the protection of animal and plant species threatened with extinction.

Additional funding is available for projects in the following areas:

- protection of the most valuable turf-bog areas;
- increasing water retention in forest areas;
- revitalising environmental disaster areas (e.g. the Sudety Mountains forest);
- protection of top natural value lakes against contamination;
- air and water protection in national parks;
- post-agricultural land afforestation, and the reconstruction of wood stands in state-owned forests, for purposes of increasing their biological diversity.

Regional programmes are applied to concentrate funds in very important and valuable areas to generate more significant ecological effects (i.e. Biebrza Valley Regions, Sudety Mountains).

5 Project financing conditions

The EcoFund provides financial support for nature conservation projects in the form of **non-refundable grants**. Such grants may be provided exclusively to investments related directly to environmental protection (in the implementation phase), as well as to non-investment projects in the area of nature conservation (i.e. ecological education). EcoFund Foundation

does not provide additional funding to scientific research, metering operations, any studies or reviews, or any project documentation-related activities.

The actual amount of investment project grants is usually calculated with the Net Present Value (NPV) and Internal Rate of Return (IRR) rates applied. Should the grant application be filed by a business entity, the EcoFund should usually not exceed 20% of project costs, but may reach 30% in well-justified cases only.

Should local authorities be the investor, the grant may cover up to 30% of costs (or 50% in special cases), whereas in case of budgetary entities undertaking environment-related investment beyond their statutory objectives, EcoFund financing may cover as much as 50% of the costs.

With regard to projects organised by non-governmental public (nature conservation, charity) non-profit organisations, the EcoFund grant may cover up to 80% of the costs for nature conservation projects, and up to 50% of the costs in the case of environment-protection related projects.

The EcoFund may provide financial support to projects both in their opening and implementation stages, if their technical progress does not exceed 60%. Since 1 January 2001 minimal EcoFund Foundations grant for nature conservation projects is at level 50 000 zloty (ca. 12.5 thousands USD).

6 Grant application assessment procedures

In nature conservation sector there are two procedures of projects evaluation:

A - standard, individual, 2-steps evaluation,

B - every year, 1-step, competitive applications selection in 4 categories.

The first step of procedure A, applied also in other EcoFund's sectors, is evaluation if proposed project (preapplication) is consistent with EcoFund Foundations priorities. In case of positive result applicant is invited to submit a application with full set of data and documents required. Than after detailed ecological and financial analysis of project application and very often negotiations with applicant and project proposal corrections and rearrangements, project is submitted to Managing Board for decision.

Procedure B is applied in four categories: wetland conservation, water retention in forests, endangered species conservation and nature conservation in landscape parks. Via this procedure pass majority of nature conservation sector projects. After public announcement about projects selection for financing project applications are collected in a given category. Than Jury composed with experts, nature conservation administration and NGOs representatives evaluates application and gives recommendations to Managing Board.

Procedures usually include negotiations with applicant to make project proposal consistent with EcoFund's tasks and priorities. Selective competitions increase public participation in decision making process (Jury participants).

7 Projects co-financed by the EcoFund

Circa 30% of all proposals for grants in nature conservation sector successfully pass through whole procedure and are co-financed by EcoFund and implemented. Mostly frequent applicants are: local authorities - 29% (mainly sewage treatment projects in national parks and nature reserves), State Forests - 26%, NGOs - 24%, and state administration (mainly national park and landscape parks) - 21%.

Table 1 presents number of projects and amount of money spend by EcoFund for nature conservation projects in period 1992 - May 2001. Box 1 presents few examples of projects in that sector.

Programme	Number of projects	Total budget (thous. zloty)*	Ecofund`sgrants (thous. zloty)*
wetland conservation	34	21.856	7.115
forest ecosystem conservation	19	92.374	22.507
water retention in forests	24	9.114	3.704
genetical resources conservation	3	12.346	2.113
nature conserv. in landscape parks	10	3.023	1.051
ecological education in national parks	8	17.567	3.230
endangered species conservation:	58	38.470	14.712
- plants	7	3.536	1.585
- invertebrates	3	3.058	1.202
- fishes	9	15.259	5.899
- amphibians, reptiles	8	1.190	528
- birds	25	8.939	4.070
- mammals	6	6.488	1.427
sewage management in protected areas	41	54.791	15.661
Total (zloty)	197	404.739	113.259
Total (USD)		101.185	28.315
* / 4 zloty = 1 USD			

8 Conclusions

1. The EcoFund Foundation is important financial mechanism for nature conservation projects in Poland.
2. International funds (debt swap, eco-conversion) are managed by national body (Management Board) which is supervised by international / national body (Foundation Council).
3. Applied structures, procedures and criteria allow to maintain transparency in decision making processes and to support cost - effective (from ecological point of view) investments.
4. Set of priorities allows to fulfil donors-countries expectations (i.e. ecological conventions) and national needs in nature conservation as well as in other sectors.
5. The OECD review of EcoFund's operations was positive (OECD, 1998, Paris). In the year 2000 the Government of the Kingdom of Norway joined to the debt-for-environment swap mechanism with Poland. In the same year Government of Switzerland supported EcoFund's budget with extra 6 mln. CHF, as a donation, other than debt swap mechanism.

Strana Zapovednaya - Russian National Fund for the Environment

Natalia Moraleva¹

Strana Zapovednaya, Russia

Irina Sannikova²

Dersu Usala Foundation, Russia

1 Foundation

The foundation is established in 1999 on the initiative of the “Sibirsky Aluminiy” industrial group, under the protection and participation of the Russian State Committee for Ecology.

Founders

- “Sibirsky Aluminiy” industrial group
- Russian union of industrialists and proprietors
- Bryansk Chamber of Commerce

The Foundation Structure

The Governing Board:

Chairman of the Governing Board — Amirkhan M. Amirkhanov, Head of the Department for nature protection and ecological safety at the Ministry of natural resources of the Russian Federation.

The Board of Founders:

Chairman of the Board of Founders — V.A.Erenburg, Vice-president of the “Sibirsky Aluminiy” industrial group.

The Board of Directors:

Chairman — V.B. Stepanitsky, Deputy head of the Department for nature protection and ecological safety at the Ministry of natural resources of the Russian Federation.

Director: Irina Sannikova

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1.1 Why was it founded?

The network of the Russian protected areas is unique and incomparably significant for the biodiversity at the global scale protection.

Russian Protected Areas network

- Occupies about 2 % of the country territory
- Incorporates 100 nature reserves, 35 national parks and 66 national federal reservats
- 22 nature reserves are granted the status of biosphere reserves by UNESCO
- are under the UNESCO jurisdiction and are the part of World Heritage
- reserves are under the jurisdiction of the Ramsar Convention on the wetlands protection
- 4 reserves are granted special Diplomas by the Council of Europe

Until recently various international organizations ONLY used to give necessary support to the Russian protected areas network. This must be changed! We must and are perfectly able to protect Russian nature — our national heritage.

The Mission Statement of the Foundation

- Help in making Russian domestic industries more ecology-oriented with a view to its further development towards flourishing
- Give support to the protection of the Russian nature
- Get Russian businesses more involved in the decision-making for nature protection. The joint effort of the politicians, businessmen, public activists, scientists, artists and representatives of clerical circles will help protect the Russian nature and save Russian national heritage — the absolutely unique network of the protected areas

Aims and objectives of the Fund

- To attract Russian businesses, governmental organizations and the general public to the problems of nature conservation in general and the development of the protected areas network
- To accumulate the funds addressed for the nature conservation by the domestic donors
- To assist the industries in devising their own ecological strategy and creation ecology-oriented production processes
- To create the positive image of the ecologically responsible Russian industries in the eyes of the domestic and international public
- To finance projects and programs aimed at nature protection
- To help ecologically sustainable small businesses in getting loans

2 How does it work

History

In 1997 Sibirsky Aluminium industrial Group established the “Chazy” regional foundation in Khakasia republic.

The Fund sees the following as its main required activities:

- Large scale environmental projects to involve all groups of the population
- Permanent PR campaign in the mass media, including the electronic media, to inform about the achievements made by the foundation and to create the positive image of the Sibirsky Aluminium and its significance for the public life in the region
- Create contacts with the central media, invite popular musicians and other artists to the region
- Constant cooperation with local and regional politicians, participation in the governmental programs and projects
- Permanent interaction with various nature protection organizations, international foundations and NGO

The “Chazy” ecological foundation activities resulted in

First stage

- Growing level of ecological awareness in the local population; understanding how important it is to keep and develop the protected areas network
- The Saynsky Aluminium Plant is now known in the region as an ecologically responsible enterprise

The “Chazy” foundation is

- Well known among the regional authority, nature reserves of the region, other industrial enterprises, general public
- The ecological foundation has gained some positive experience cooperating with an industrial enterprise
- This experience can and must be expanded to the federal level and used for the development of the protected areas network

Second stage

- The Chazy foundation initiated the negotiation process between the Department for nature protection and ecological safety and the Sibirsky Aluminium industrial group
- The decision was taken about the creation of a national level fund “Strana zapovednaya”

Third stage

- A possible ecological strategy for the Sibirsky Aluminiy industrial group was worked out
- The main activities of the “Strana zapovednaya” fund were identified

The “Strana zapovednaya” foundation priority activities

- Support of the ranger services of the nature reserves and national parks
- Personal financial support given to the outstanding environmentalists and specialists in nature conservation
- Support of the programs aimed at the protection of rare and endangered species
- Development and practical implementation of the projects in ecological awareness and ecological tourism
- Development of the methodology of the nature protection and improvement of the PA personnel qualification
- Participate in the creation of the national Russian doctrine on nature protection, including through actually writing certain parts, on the regional level
- Help information in- and outflow in the nature reserves and national parks
- Improve the level of international cooperation in the field of the nature protection

Success and achievements

- The regional educational programs are introduced to improve the ecological awareness of the population through the “Chazy” ecological foundation (environmental and nature protection actions are taken, contests and quizzes are held, a special newspaper is published). About 16 % of the population of the republic of Khakasiya is involved in these activities.
- A special professional competition for ranger services personnel was established, which enabled growing prestige of the job. This was the first large scale action taken by the fund in cooperation with a Russian enterprise and the Ministry for the Natural resources.
- The Khakasky nature reserve got some financial support
- The development of the ecological tourism in the region was financially supported
- The “Dersu Uzala” ecotourism fund was supported in its move to introduce the theory and practice of sustainable tourism in the PAs of the Russian Federation
- The Foundation activities and achievements were adequately presented to businessmen, public figures and clergy
- Support given to the promotion of the “Mining, mineral and sustainable development” international project in Russia

- In the model region of Khakasiya a special project “From the centre to the regions: priorities in the Russian ecological policy” is launched and being implemented together with the Centre for the ecological policy. The main objective of the project is to influence those responsible for the decision making in the area of projects implementation, according to the existing priorities in the Russian national ecological policy

3 Problems

It is very slowly and with difficulty that new businesses are got involved with the financing of the projects linked to nature protection

The main reasons are

- The current legislation is far from being transparent, the industrial enterprises don't get any stimuli for acting as charities and thus are not encouraged to participate
- The industries are too often under the restructured; change of owners doesn't encourage long-term projects concerning vulnerable matters
- There are more than enough acute social problems in the country other than nature conservation. Homeless children in the public mentality come prior to the tiger conservation
- Political and economic instability makes today's problems prevail over the problems of the future generations

3.1 Delusions

Delusion 1

A positive impression on the potential sponsor can and should be produced instantly.

False. A beneficial relationship leading to cooperation requires years of mutual trust

Delusion 2

Understanding needs of your prospective sponsor is not necessary if you can manage to persuade the authority to give aid to nature conservation and to protect it for the future generations

False. In fact, it is difficult to achieve success listening only to your own self! One must understand the problems the enterprise experiences and its strategic goals. The seeker must be able to explain why financing the environmental projects will help development of the particular enterprise or the industry

Delusion 3

More attempts one makes to arrange financing and more contacts one establishes with enterprises, the better.

False. In fact

- Only the largest companies, those interested in promoting their production to the world market, are inclined to improve their image and reputation. For others, any means leading to maximization of profits a real objective
- Better be a reliable partner of one company than a chatter-box known to everyone

How to attract big businesses to the environmental projects

- Select a company you would wish to “do business” with
- Study its problems and strategies
- Explain why they should investment into environmental projects
- Start from a PR-action to convince the company management to improve its public image as it is a step to success
- Assist in working out their environmental policy and responsibility
- Support given to environmental projects must be incorporated into the strategy of the company’s environmental policy

4 Further prospects

Projects and the overall activities of the foundation will be implemented with the financial support of the “Sibirsky Aluminiy” industrial group

Short-term plans

- To have more Russian companies involved with investment of the protected areas network
- To ensure further investment into:
 - (a) various projects to support the protected areas network;
 - (b) annual competition to identify the best in the profession;
 - (c) Educational and ecological program “TheChazy ecological foundation” in the republic of Khakassiya
 - I. The main target of this program is to attract public attention to the ecological problems of the region
 - II. The main power points of the program:

- (a) improvement of the ecological education and growing environmental awareness
 - (b) public campaigning and publishing activities
 - (c) assistance to libraries and museums of natural history
- To support and development of the sustainable tourism in Altay-Sayany region
 - To continue the project “From the centre to the regions: priorities in the Russian ecological policy”
 - To establish special “Russian Aluminiy” awards intended for the significant input in the protection of the Russian nature. He winners come from the governmental, public, political circles, those awarded can also be artists, business people, journalists and environmentalists.

Environmental Taxes, Levies and Surcharges

Tomme Young¹

IUCN Environmental Law Centre, Germany

Let me tell you how it will be –
there's one for you, nineteen for me,
'Cause I'm the taxman...
Should your 5% appear too small,
be thankful I don't take it all,
'Cause I'm the taxman...
John Lennon

Three of the financial mechanisms most commonly used for financing environmental conservation activities are taxes, levies and surcharges. In many countries, these terms are specifically defined, to describe very specific types of legal tools, and often these definitions differ significantly from country to country. However, in all cases, the ultimate objective of all three is basically the same – to create a legal means by which the government can assess private individuals and corporations for money to be used for governmental operations. This presentation discusses the specific use of these mechanisms as means of financing conservation activities, including protected areas and the administration of biodiversity conservation programs.

Tax-related decisions involve a delicate balance of political and legal concerns. In many minds, the political issues are thought to predominate. Many elected officials find that the public view is focused on the proliferation of taxes, and that this perception may have a strong impact on the official's ability to stand for re-election. As a consequence, in many cases, the questions of who is taxed, and how taxing decisions are made, are strongly coloured by public opinion and concerns about re-election.

This duality suggests the best method of approaching a short summary of the use of these mechanisms in the conservation field – by examining first the policy choices that underlie any tax/levy/surcharge, and then to consider the more specific legal questions regarding the particular characteristics of a tax law,² if it is to be effective in putting those policies into effect.

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² Throughout this paper, the term “tax” will be used to refer to all three mechanisms – taxes, levies and surcharges – unless specifically stated to the contrary.

1 Political issues

Who Pays? The first question that must be addressed in any decision to impose a tax relates to identification of the persons, or groups, that will be assessed. It is probably a truism among politicians and others that tax legislation will be more acceptable to people who are not included within the scope of its provisions. Hence, when the policy-makers ask “Who should be taxed?” the most common answer they will receive is “Not me.”

To put it more formally, many elected officials find it politically expedient to impose necessary taxes on persons outside of the political constituency where the official will stand for re-election. Hence, when the question is national in scope, the preferred options are often those which tax outsiders (tourists, foreigners, expatriates, non-native corporations, etc.). Second choice in such cases might be to tax those who provide goods and services to tourists and foreigners, on the assumption that those individuals can pass the burden on to the outsiders, by increasing prices.

In this connection, many conservation programmes, especially those relating to national parks and protected areas, seek to impose taxes on tourists in the form of hotel and airport taxes based on the theory that many foreigners enter the country and book hotel rooms for purposes of seeing protected areas. Similarly, taxes may be imposed on tourists services such as tour guides, equipment rentals, etc.

Justifications for another tax: The second element of the political decision to impose a tax relates to the underlying reasons for imposing the tax. Public acceptance of a tax-related decision is often closely correlated to the popularity or perceived necessity of its underlying purpose. Conversely, the extent of approval of a particular purpose may depend on who is taxed – a tax purpose that would be thought marginal as a justification of a rise in income taxes might get general approval as a justification for the imposition of an airport tax, for example.

Acceptability of the purpose of a tax is sometimes difficult to predict, however, it usually turns on whether the particular objective is politically popular or a recognized necessity. In the area of conservation, for example, preservation of species or areas that are high-profile national icons or symbols often gets strong approval. Such icons include the panda, the American bald eagle, and other nationally important species. Similarly many countries have great pride in their “flagship” national park, and view its preservation as particularly important.

On the other hand, the perception of necessity may also be an acceptable justification. In the area of conservation, the idea of “long-term value” – the need to make an investment now, which will “pay off” in the future (when the tourism potential of a restored protected area is recognised, or when uses of natural resources are sustainable) may be a strong motivation in favour of the imposition of a tax.

One type of justification that is often used with regard to environmental taxes is the “user pays” principle. Originally developed to create a tax base to cover the costs of environmental cleanup and remedies (then called the “polluter pays principle”), this principle is increasingly

being extended to other kinds of environmental concerns, including conservation matters. In these new contexts, however, the principle is sometimes stretched too far.

The primary problem with application of the “user pays” concept to conservation is the difficulty of answering the obvious questions – “*What* does the user pay for?” or “User of *what*?” In the original “polluter pays” context, the idea was that certain industries and operations caused direct damage to the environment through releasing or emitting toxic substances to land, water or air. These industries and operations were taxed, in order that they could pay the costs of remedying the harms they caused. By contrast, it is difficult to find a single group to tax as “users” of biological diversity and protected areas. Those areas provide a very broad spectrum of benefits throughout the region and the country in which they’re located. Hence, it may be difficult to select one group (even persons who visit the parks) and tax them as *the* user of the country’s biodiversity. Moreover, it is unlikely that all protected areas in a country will have the same level of visitation; however, the “user pays” principle is often used to suggest that users of the country’s most popular national parks should pay for the entire conservation program – even those portions which are directed at less accessible, less popular, non-tourism-oriented components.

In general, in applying the “user pays” principle, it is important to keep in mind that the user is probably expected and expecting to pay for what he uses or impacts. It may be unreasonable to expect this principle to cover more than the costs of remedying the harm which tourism causes to tourist sites.

Perception of proper use of the tax revenues: A final component of the political acceptance of a taxing provision is the public’s confidence that the revenues will be expended in the manner that the tax proponents have claimed. Since it is closely tied to the legal questions of how the tax law is written and applied, this issue will be addressed in more detail below.

2 Characteristics of a successful conservation tax:

The remainder of this paper will examine the questions of how to design a legally and practically successful tax law. There are four basic factors that must be considered in answering this question:

- 1) Enactability/adoptability
- 2) Enforceability
- 3) Ability to generate income
- 4) Sustainability

2.1 Enactability

As noted above, one component of any law is its political acceptability, which is a function of its perceived economic impact, and the political acceptability of its purpose. In addition, for a

parliamentary or other body or official to impose a tax successfully, it must generally meet national standards for “reasonableness.” These standards are generally found in the national legal system, which controls the making of laws, to ensure that no laws impose unreasonable or unachievable burdens on anyone. Typically, in determining whether a law is “reasonable” (or “legally valid”) and therefore enactable, three factors are relevant – fairness, clarity, and objectivity.

The criteria of fairness in this context refers to the manner in which the law identifies who will pay the tax. Typically, such distinctions must be made for clear reasons, and should not unfairly single out one (regional, ethnic or other) group to bear a burden, unless they are the only significant cause of that burden’s existence. This concept is clear in the “polluter pays” context described above. Many countries impose a tax on specified industries that have historically been the overwhelmingly significant cause of still-existing pollution in land, water and air. This tax is then used to pay the costs of remedying that pollution – and this is considered “fair”. If, however, one single industry were singled out for this tax, despite the fact that many others were co-causes of the problem, that would not perhaps be considered a legally valid tax, in many countries.

The criterion “clarity” refers to the need to make a law that is understood by all, and that can be applied in a predictable way. It is important for any law to be clear on several points, regarding who the law applies to, and how it should be applied. With regard to a tax, every person should be able to determine with reasonable certainty whether he is a member of the class or group to whom the tax applies. Such a law should also describe the method for calculating the tax in a manner that is clear, and that ensures that every person applying the law to the same set of facts would, in the end, come to the same result. In many countries, where the law is not sufficiently clear on these and other matters, it can be held to be legally invalid.

Finally, the law must be objective in its nature. This is sometimes considered an enforcement issue, while other countries consider it an element of the legal validity of the law. Objectivity refers to the manner in which one determines whether he is in compliance with the law. If the law places too much discretion in the hands of the officials involved in direct administration of the law, it may be considered legally invalid. An example can be found in a law which regulates hunting. If the law says that it is illegal to hunt in a national park without a license, then the question arises, how to determine if one was actually “hunting.” In some countries, it is assumed that the officer will make this determination. In those countries, the law may be deemed invalid, if it does not provide sufficient objective criteria to guide the officer’s discretion in making these decisions. In other countries, such a provision may simply be interpreted quite literally – it may be necessary to catch someone in the act of killing an animal, in order to apply the law to him. This raises other problems. The park service may need to have a great many park rangers, for example, to ensure that all parts of the park are constantly monitored. Similarly, it may be necessary that the rangers travel in pairs; otherwise the hunter may deny that he was caught in the act, and the court would have only two conflicting eyewitnesses. The presence of a second corroborating ranger may alleviate

this problem to some extent. A better approach may be found where the law provides that it is illegal to be in possession of hunting paraphernalia (rifles, bows and arrows, hunting knives, etc.) in a national park, unless one has a hunting license. Such a law is objectively enforceable – the ranger must only prove that the hunter was seen inside park boundaries, in possession of such equipment. These questions of objectivity involve a delicate balance, not only may a law be legally invalid if it is insufficiently objective (giving too much discretion to officials), but in other cases it may be invalidated if it is “overbroad” (making actions illegal where there is no justification to consider them so.)

2.2 Enforceability

Another critical characteristic of an effective law is its enforceability. There are three elements of a law which determine whether it is enforceable.

First, a tax law is only enforceable if it taxes things, activities, and persons over which there is control. A tax on picking flowers, for example, may be a good idea in some circumstances, but may be impossible to enforce, simply because it is nearly impossible to exercise control over this activity. One may pick flowers outside of the view of any official, and no one may ever have any other reason to disclose or discover that the flowers have been picked. Hence, charging a fee for every person who enters a national park is “enforceable” if there is a reasonable way to control all access to the park (i.e., if the park is accessible only through specified gates that are manned during all hours in which the park is open.)

A second component of enforceability relates to whether sufficient enforcement mechanisms exist, and whether the country has the manpower and the capacity to use them. For example, where a park is accessible through many unmanned entrances, it may be appropriate to charge a fee for camping. This fee is only enforceable if there is an appropriate mechanism – i.e., a means to determine who is camping within the park, and to charge the fee to each one. Many such parks enforce this fee by hiring rangers who visit every site in the park at a specified hour of the night or early morning, and exact a fee from any camper not already in possession of a camping permit.

Another important issue regarding enforceability is the problem of evidence. This issue is connected to the “objectivity” issue described above. In the example there provided, it may be very difficult for an officer to provide sufficient evidence that a suspect was hunting without a license, but easier to demonstrate that he was in possession of hunting paraphernalia inside a national park.

A final enforceability problem is the search for “loopholes.” In many countries, courts interpret taxing and licensing laws quite narrowly. Thus, a law which requires a license to operate a motorboat or within designated marine protected areas might be deemed not to apply to jetskis. The loophole problem is more problematic in some countries than in others. In all cases, it is important to consider the manner in which courts and officials interpret laws, and to draft them in an appropriate manner.

2.3 Income Generation

In the context of this Workshop, we are examining the use of taxes as mechanisms for generating income to fund particular conservation activities. In this connection, economists note that taxation can have two potential economic impacts:

Revenue-raising: producing revenues for government operations

Deterrence: causing a decline in the number of people using certain goods or engaging in certain activities by increasing the net costs of those goods or activities

In general, there appears to be a strong correlation between the amount of the tax (or tax increase) and its primary impact. Where the tax (or increase) is small, it generally will have little deterrent effect, and will operate primarily as a revenue measure. Where the amount of the tax or increase is large, however, it will have, at least for the first few years, a deterrent effect. Thus, calculation of the revenue to be obtained from a tax is often an uncertain science – until it can be seen whether members of the affected public perceive the tax to be large enough to cause them to take measures to reduce its applicability to them.

Perhaps the most important fact concerning the revenue/deterrence dichotomy is that one is more likely to view a tax on a luxury as “high,” than an increase in a tax in essential items (income, fuel, food, etc.) As a result, it may be that taxes imposed on tourists and services to tourists will have a greater effect in decreasing tourism than in raising revenue from external sources.

2.4 Sustainability

Related to the questions of income generation are the questions of sustainability. A tax provision will be successful as a mechanism for funding conservation activities if it provides a source of income that is sustainable over a long term. A number of factors can interfere with the sustainability of a taxing mechanism.

One of the most important issues is the stability of the allocation of the tax’s proceeds. In many countries, all tax proceeds are collected by a central authority, which then makes determinations on an annual basis concerning where the money shall be allocated. Often, these allocations are not required to consider the provisions of the various tax laws, which are interpreted to be suggestions regarding allocations, and not binding on the financial authority. This may be one instance in which the difference between “tax”, “levy”, “fee” and “surcharge” may be important, if some types of revenues (such as national park gate receipts) are exempt from the general financial requirements.

Another factor that may affect sustainability is the possibility of future changes to the tax allocating structure. For example, a national parks service may obtain a “hotel tax” on the theory that a significant portion of the country’s hotel guests are foreigners who come to the country to visit the national parks. Later, however, the cultural heritage agency may assert a

similar claim to a share of that tax, as might other entities. Such claims would dilute the national parks share of the tax.

Politically, then, the ongoing justification of an existing tax is every bit as important to the tax's sustainability as the initial efforts in obtaining it.

Sustainability may be impacted by a number of other factors as well. Some of these are outside of anyone's control. For example, taxes of tourism activities are often cited as a mechanism for financing conservation activities. However, a great many factors may change the tourism industry, without appreciably altering conservation needs within the country. Similarly, if the tax relates to a specific activity, such as riding mopeds in the national park, for example, the decline in the popularity of mopeds might significantly decrease levels of revenue.

3 Conclusions: A Dose of Reality

In sum, while taxes, levies, fees and surcharges may form an important component of the financial base of nature conservation activities, they cannot be expected to finance all or even a significant part of these activities. For this reason, it is important to conclude this paper with a short list of cautionary conclusions for those seeking to employ these mechanisms in the field of conservation finance.

- The "user pays" concept, when applied to conservation activities generally covers little more than the damages/losses directly caused by the users;
- Moreover, a significant number of users never pay;
- It may be difficult to obtain an increase in taxes affecting economic sectors that are nationally important, owing to national fears that such tax increases may have negative market effects;
- Taxes on damaging activities are (one hopes) not sustainable, hence it is important to make a distinction between taxes imposed for their deterrent effect, and those that are designed to provide sustainable income;
- Despite the fact that it seems justified and reasonable to impose a particular tax (on hotels or airport usage, for example) for the benefit of conservation or protected areas, one should not depend on this, for the simple reason that all government programs are hoping to tap new tax revenues. Many other programs and ministries will probably be able to justify their use of that revenue with equal skill;
- Most important, taxing mechanisms are within the purview of economic and financial ministries and parliamentary committees. These bodies operate on the basis of tried and true financial principles, such as costs and benefits. Obtaining support from these ministries can be difficult due to the simple fact that only a few conservation needs can be justified or fostered on purely financial grounds.

Green Fund System in the Netherlands - Private Money for Nature

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1 Introduction

This paper offers a description of the origin and the background of the Green Fund System (GFS) in the Netherlands. In 1992, a GFS was introduced in co-operation between the government and the financial sector. Although both parties had different objectives, it resulted in a successful system that is different from any other system known. The combination of a tax incentive, a special designed framework to designate green projects and an active involvement of the financial sector contributed to its power and its public support. Private savings invested in these Green Funds are available in a soft loan system with low risks for the investor. Due to the GFS an important amount of private money is available with only a low governmental contribution. The multiplier effect (ratio between private input and governmental input) is approximately 40-50. The total investments in this Green Fund System now amount to about 2 to 3 billion EU.

2 Measures for nature and environmental protection

The introduction of policy measures should be based on an analysis of the underlying causes of the loss of biodiversity or the increase of environmental pressures.

2.1 Underlying causes of loss of biodiversity

Five major underlying causes for the loss of biodiversity can be distinguished. These underlying causes should be addressed in sequence.

Lack of knowledge/understanding/awareness

The lack of knowledge or understanding of the environment and of biodiversity has tremendous effects. It results in underestimating or even neglecting the (economic) value of biodiversity. The lack of understanding and knowledge results in the lack of public awareness and consequently the lack of political willingness to change. As long as the lack of

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knowledge, awareness and understanding persists nothing will be changed in favour of conservation.

Lack of property and user rights of biodiversity

Mostly nobody is considered to be the legal owner of biodiversity. Furthermore, in most countries rights concerning elements that are of vital importance to conservation (e.g. the right to influence the water table) are not well defined. Mostly biodiversity is a free good, sometimes it is considered as a common good. If it is a free good without a legal owner there is nobody to protect biodiversity. Everyone can use it without limitation. If it is considered common property local authorities or governments should be responsible for the preservation of the common good. A way to solve these problems is the creation of ownership for biodiversity. Ownership should not only be with local authorities or governmental organisations. NGO's and private companies may play an important but not a totally free role. The private sector and the NGO's should be restricted in the use in order to achieve a sustainable conservation. An alternative approach is an ownership that differs from the classical Roman-right based ownership and from the user right. Permitting systems can give the same protection as ownership.

Insufficient legal systems

The lack of an adequate legal system to protect biodiversity is one of the important underlying causes. The lack of property rights for biodiversity does not improve the situation. After creating a system of property rights a legal system should be constructed to give the owners a better legal power to defend their property. The legal system should urge the owners to respect their property and to exploit and use it in a sustainable way.

Lack of or insufficient enforcement

A legal system without enforcement will never be effective. Enforcement can only be effective in a well developed legal system which is considered by society to be balanced and reasonable.

Weak economic base

Biodiversity-friendly behaviour often has a bad and insufficient economical base. Biodiversity-friendly activities are for this reason not supported by economic policy. On the contrary, sometimes biodiversity-destroying behaviour is supported. In a sustainable economy biodiversity friendly activities should have a sound economic/commercial basis. This can be achieved using a mixture of economic measures.

2.2 Policy measures for conservation

After the analysis of the underlying causes is completed, the preservation measures should be developed. The measures can be divided in three major groups:

- **legislative measures** (e.g. legislation on property rights, user rights, property obligations, user obligations, legislation to provide users and owners with the tools to protect the biodiversity against violation).
- **social measures** (e.g. awareness, education, covenants)
- **economic measures** In practice the legislative measures should be the first to be implemented, the economic measures should be the last to be implemented. There is no benefit in applying the economic measures when the property rights are not well defined or when the society does not support conservation. It is unlikely politicians will be eager to provide funds when there is a lack of support from society.

As this paper only deals with an economic measures (GFS) in the policy toolbox I will concentrate on the economics measures. Often it is suggested that incentives should be the first measures to be implemented. In my opinion one should start with other economic measures to realise a sound financial base of a sustainable conservation. Incentives using tax payers money are the last way to solve the problems as it is expensive and vulnerable to governmental budget quarrels. Besides, incentives often don't address the underlying causes but leave them unharmed so incentives are in an economic way not sustainable. To address the economic underlying causes one needs other policies than just incentives for biodiversity saving behaviour. The important measures needed to attack underlying causes are mentioned below. They should be implemented in the ranking as mentioned. One should start on top of the list to solve problems on the protection of biodiversity. If, for good reasons, a measure can not be applied, one would chose the next one.

The major economic policy measures are:

- **polluter pays principle or the user pays principle** The lack of the application of the polluter/user pays principle may disturb a fair competition between a biodiversity saving and a polluting enterprise. It is necessary to apply the principle because it will lower pressures on biodiversity.
- **adverse subsidies** Adverse policy measures increase pressures on nature and the environment. Adverse subsidies (and other adverse policy measures) promote non-sustainable economic activities and disturb the market balance between these activities and the sustainable activities. The adverse incentives should be abolished or changed into a less harmful instrument.
- **regulatory use of the tax system (greening of the tax system)** This environmental tax aims at regulatory effects. The tax may result in earmarked money for nature conservation but primarily it is not focused on fund rising for nature.

- **market creation** Market creation comprise any measure that uses the different market values of nature to generate funds to support nature conservation. Market creation can be achieved by the public sector as well as by the private sector. Examples are: eco-tourism, services, entrance fees, sustainable harvesting, hunting and fishing rights etc.
- **fund rising use of the tax system** This tax (or fee) is focused on generating an earmarked flow of money for preservation. The difference between the fund raising taxes and the regulatory taxes is quite important. The level of a fund rising tax is low as its aim is not to stop or lower activities.
- **economic incentives** If all measures mentioned above are insufficient or can not be applied one should introduce economic incentives. The applied economic incentive will differ depending on the type of activity to be supported. If one wants to support a conservation activity that will never be self supporting, special incentives are necessary. The incentive should be developed and applied in the right way and should be custom made for the special purpose. For example, in The Netherlands, accelerated depreciation is introduced for environmental investments by profit making enterprises and a tax credit system is used for environmental and energy saving investments.

A system of green funds was introduced to promote all types of sustainable activities and biodiversity protection. The system is not a separated measure but it is part of a total coherent system of legislation, social and economic measures.

3 The mechanism of the Green Fund System in the Netherlands

The system, as operated in The Netherlands, is quite different from any other known ethical fund system. The major differences are:

1. The role of the government as the GFS was initiated by the government and the government is still involved. The GFS is incorporated in the income tax in such a way that participation by a private person in a Green Fund (GF) results into a tax exemption. This is one of the driving forces behind the GFS.
2. The GFS is restricted to green (natural/environmental) projects (e.g. forestry, wind energy, organic agriculture, nature conservation etc).
3. It operates on a project's base and not on a corporate base (e.g. by participation or by buying shares).
4. The GFS results in a financial advantage in favour of the entrepreneur who initiates or owns a green project. This advantage will result in the creation of more and new projects. So, by introducing the GFS, a very active incentive to speed up green projects is realised.

In the Netherlands the income of a private person obtained from savings or investments (interest or dividend) is subject to income tax. It is subject to the top rate in income tax. The top rate depends on the total income level in a fiscal year. For private savers, who are participating in the GFS, the top tax rate is estimated to be about 50%. The income derived from capital invested in Green Funds is not subject to income tax. The tax advantage is one of the major incentives for a private person participating in the GFS. However, in practice, the advantages of the tax exemption are only to a small extent obtained by the private saver. The major part of tax advantage is applied to achieve a lower interest rate for the entrepreneur who invests in a green project. This is due to the lower interest rate obtained by the saver.

In the next schedule an example of the working mechanism of the GFS is given. In practice the interest rate for the saver and the interest rate of the green loan depend on the various circumstances, so this example may be different from other ones.

The working mechanism of the GFS system		
	Normal Commercial Loan	Green Fund Loan
Net Interest Saver	2.5%	2.5 %
TAX	2.5%	0 %
Gross Interest Saver	5 %	2.5%
Bank Interest Costs	5%	2.5%
Bank, Costs, Profits, Risk	1%	1.2%
Interest level Loan Entrepreneur	6%	3.7%

The obtained difference, in the interest rate between a loan in the GFS and of a normal commercial loan amounts to 2.3 % in this example. The net rate obtained by the green saver may be influenced by the savings term. The costs of a bank may depend on the magnitude of the loan and the risk level. The saver, investing his money in a green fund, is exposed to a low risk level as the bank guarantees payment of interest and repayment.

The interest level of a green loan and the difference between the interest rates of the green loans and the commercial loan depends on the level of the interest on a commercial loan. Increased interest levels on commercial loans due to the market circumstance, will to a lesser extent result in an increase of the Green Loan interest rates. At high interest rates for commercial loans (e.g. 10%) the interest rate of the GFS will be approximately 5.7%.

As shown the GFS results in a soft loan system with low interest rates for loans for green projects. In this way the GFS promotes investments in projects with a low return of investment. This low interest rate is a major factor in projects with high capital costs, a long technical lifetime and low operating costs such as nature projects in which purchasing of land is needed, wind energy, district heating, sustainable housing. For this type of projects the

GFS system results in an important reduction of the yearly costs. The GFS is a less adequate tool for projects with high operating costs (salaries etc).

4 The history of financial companies involvement in environmental policies

In the Netherlands the financial sector is already actively involved in the implementation of the environmental policy. The financial sector plays an important role in measures to promote investments in clean technology or investments in energy saving equipment. The most important governmental incentives to speed up these types of investments are constructed in order to be attractive for the financial sector. The major incentive to speed up environmental investments is accelerated depreciation of investments in environmental equipment (1). The accelerated depreciation of environmental investments offers entrepreneurs an immediate financial advantage when investing in designated environmental equipment. Since it is allowed to apply the scheme on operational lease, the financial sector is strongly involved in the scheme. Other important fiscal incentives are the tax deduction scheme for investments in energy saving and renewable energy and the tax deduction scheme for investments in environmental equipment. In these scheme the operational lease is allowed and a strong participation of the financial sector was performed. There has been a history where the government frequently implemented its financial incentives in a way the financial companies were able to be active players in financing environmental investments. This was continued in the establishment of the GFS.

5 The origin of the Green Fund System

The government's introduction of the GFS had various objectives. In environmental policy in the Netherlands the basic quality of the environment and the conservation of nature is realised using legislation measures, social measures economic measures. However a more sustainable society needs more than the prevention of pollution or the reduction of the amount of used energy and the protection of specific areas. Nature should become a more important part of economic activities. There is a lack of such new economic activities e.g. organic agriculture, sustainable energy etc that may create new valuable areas or may lower pressures on these areas. In today's market, these activities are not yet profitable enough to be introduced at a desired scale. The Dutch government wished accelerate up the introduction and the dissemination of these low profitable and protective activities. Assuming these activities should be self supporting in future the need was now to introduce an economic incentive to lower the costs during a certain period.

Although the objective was clear it was obvious more instruments could be developed to achieve it. The GFS however had some very important advantages:

- The amount of money required for the introduction of the activities was considerable. There was a need for private capital.
- The objective was to create activities that should be self-supporting. The judgement of the economic power of a company requires special skills not at the disposal of the government or its agencies.
- The green projects required a high financial input (e.g. 70 % of the total invested capital). A subsidy could never meet this level.
- The involvement of citizens was important to create a support for the economic activities and to promote awareness.
- Seeing the historical role of the financial sector in the implementation of the incentives, and its economic skills, the involvement of the financial sector became obvious. In addition to this it was considered to be important to promote the awareness of the financial companies.

6 Processing in the Green Fund System

Several processes are needed to keep the GFS going.

Founding a Green Fund (GF)

A bank with the intention to develop a GF, is subject to the national regulations regarding financial companies. The National Bank has been charged with the enforcement of these regulations. A commercial bank submits a proposal at the National Bank. After the proposal for the fund is accepted by the National Bank the fund has to be transformed into a GF. The GF status is assigned by the Tax Revenue Department. The main requirement is that at least seventy percent of the deposit must be invested in green projects. Occasionally the GF has to send reports to the National Bank and to the Tax Revenue Department. The strong regulation of the funds guarantees the reliability of the system, in its financial aspects, in order to protect the savers.

Arrangement of a Green Loan, designation of Green Projects

When somebody wants to invest in a new green project he contacts a GF. As the major banks in the Netherlands each have a GF he may contact a local bank office. The GF checks the project for its economic features (e.g. risks and profitability) and whether the fund is willing to provide a loan to the project owner. The GF submits the project to the government agency. The agency has to process the project within eight weeks. When the project meets the criteria a so-called Green Certificate or Green Statement is issued to the project owner and to the GF. Now the project owner and the GF can arrange the loan. The project owner can change to another GF after obtaining a Green Statement as he is not obliged to get the

loan from the GF that submitted the project to the agency in the first place. The project owner can shop around at various Green Funds to arrange the most favourable loan. This contributed to a healthy competition among the Green Funds.

Collecting money by the Green Funds

The Green Funds requires money to provide green loans. One of the major problems of the funds is to manage the timing of obtaining the deposits and issuing the loans. Besides the Green Funds are confronted with redemption of the loans and the obligation to have at least seventy percent of the deposit invested in green projects. In practice, the money is obtained by issues so a considerable amount of money is obtained at one moment. The demand for the money for loans is more gradually satisfied. This makes the managing of a GF rather complicated especially during the period the fund is still of a limited size. A better balancing between the incoming and the outgoing flow can be obtained by introducing a Green Bank. In a Green Bank a smoother incoming flow of the money can be created. This is the reason Green Banks have been introduced in the Green Fund System.

Auditing process in the GFS

The environmental aspects in the GFS are checked by the Ministry of the Environment or by its agencies when processing the Green Certificates and during the term of the green loan. In checking the financial and economic aspects the various stakeholders have their own role and responsibility. The financial and economic aspects are part of the assessment for a Green Certificate. During the term of the loan the GF is responsible for the quality of the administrative system of the project owner and the GF is obliged to submit information on the project to the Tax Revenue Department and to the National Bank on a regular basis.

7 Role of the various stakeholders in the Green Fund System

Public

The Green Fund System is only successful because the various stakeholders co-operate. The green saver is the one who provides the money. In the first period the issues of the Green Funds were strongly oversubscribed. The public pressured the banks to establish Green Funds. A bank that failed in creating a GF might lose clients. The question is why the saver does invest in the Green Funds. There is no available research on this point. In the past we had some ethical funds in the Netherlands with a real low economic output. The amount of money invested in these funds was minimal. Due to the tax incentive the output of the GFS is more or less competitive with other funds but is still low. In my opinion the success story of the GFS is based on the fact a group of private investors is willing to invest at a limited economic output if they are convinced that the money is being used in a right

ethical way. Furthermore this group is attracted by a low risk investment as achieved in the GFS.

Financial Companies

The banks play a major role in the GFS. First of all for a bank the GFS is business just like any other business. You can make profits with a GF. Secondly, Green Funds are used for image building and the banks do use the Green Funds for public relation purposes. However the banks play an important role. At the starting period of the GFS the banks had clients willing to invest money. At that time there was a lack of green projects so the Green Funds had to trace green projects and became active promoters of the system.

Furthermore they are very important in the screening process of the projects. As they are the risk owners when a project fails, they perform the screening on e.g. the economic aspects and management capacities. They are better skilled to perform this type of screening than governmental agencies are. During the lifetime of the project the bank is important in controlling the project. So in the GFS the skills of the financial sector are well used and the banks have a keystone position.

Another result of the GFS to be mentioned, is the banks needed skills to process the system. The participating banks founded environmental departments. These are now developing new green products and promoting other green activities in the financial companies.

Government

The role of the government was important in creating the tax facility. In the working system the role of the government is limited to awarding the Green Certificates. The processing of these certificates is centralised and transparent. Both for the green investor and the financial sector it is an advantage the government controls the characterisation and denoting of the green projects as it prevents endless discussions on what is green and what is not green.

8 Type of projects

The sustainability of a project depends on three aspects: environmental, economic and social aspects. The GFS is applied to projects in the Netherlands and projects abroad. The projects eligible under the GFS are selected using general criteria. The major ones are:

- Very high level of environmental benefits;
- Low level of economic output. Green projects with a high economic output are considered to be achievable without GFS;
- Economical self-supporting, no bottomless pit projects;
- Not yet common nature projects or applied technology or methods;
- Only new projects can qualify.

Green Fund System in the Netherlands: Private Money for Nature

These criteria applied in The Netherlands resulted in a list of enumerated types of projects eligible for the scheme. The most important items on the list are:

- Forestry and nature conservation: New forests, landscape conservation, the creation of ecological migration zones connecting vulnerable biotopes, pressure reduction, water table regulation, etc.
- Sustainable energy: e.g. solar energy, wind energy, biomass
- Sustainable housing (green mortgage): these houses have low energy use, low water use, are easily to be demolished and are built using a high level of recycled material
- Organic agriculture

As the GFS system operated in a field of new activities it was obvious not all potential projects meeting the criteria could be enumerated in a list. The projects not mentioned on the list can be submitted to a governmental agency for screening. The GFS can be applied to these projects if they meet the criteria.

The number of applications for a green certificate and the money invested in the GFS increased dramatically. In the next schedule the development of

Box 1: The number of Green Certificates issued and the value of the projects			
Year	Value EU, million	Amount of Projects²	Average costs/ project EU, thousand
1995/1996	404	213	1897
1997	990	396	2502
1998	504	359	1405
1999	676	439	1547
Total	2575	1407	1831

Box 2: Value of the Green Certificates depending on the type of projects	
Types of project	EU, million
Nature conservation	295
Organic agriculture	227
District heating grids	500
Green Mortgage	197
Wind energy	265
Biomass	45
Low energy greenhouses	145
Other projects ³	898

the value of the Green Certificates delivered by the governmental agencies is shown in Box 1.

It should be mentioned that not all delivered Green Certificates result in a loan that covers the total project costs. Usually a part of the project is financed with company owned capital.

The type of projects, in favour of which Green Statements were issued, are listed in Box 2.

The impact of the GFS is important. The GFS projects comprise more than 20.000 hectares of nature conservation, about 14,000 hectares of organic agriculture, 690 wind energy turbines, 40

² One project may consist of more items e.g. twenty windmills or ten houses.

³ Other projects are nature conservation, and other projects not mentioned on the list.

district heating grids and 6000 sustainable houses. Under the project type “other projects” a considerable number of projects relating to nature conservation are comprised. It is an interesting development that the scheme is effective in mixed projects. These are projects in which a commercial activity is realised under circumstances nature protection is achieved. Relevant examples are eco-tourism, drinking water infiltration fields and marshes (3). Another quite successful topic is organic agriculture (4,5). Until now organic agriculture has been a small-scale activity but currently it has yearly growth rate of approximately twenty five percent.

9 The application of the Green fund system abroad

Originally the GFS was restricted to projects located in the Netherlands. In 1995 the scope of the incentive was widened to include special projects abroad (6,7). The criteria applied to the assessment of the domestic projects are the starting point for the assessment of projects abroad. As mentioned earlier, the criteria for the projects in the Netherlands are restricted to economic and environmental aspects. Because the projects abroad are located in countries where circumstances are markedly different from those in the Netherlands, social and local criteria are also used in the assessment. Important criteria are among others the participation of the local (poor) population, absence of child labour, freedom of organisation, public health, and emancipation. A comprehensive system of criteria is developed and applied to the projects abroad. One could say that under the Green Projects Abroad regulations the green projects are not only screened on environmental aspects but on the general ethical merits.

The application of the Green Funds system abroad is limited to certain countries:

- The Netherlands Antilles and Aruba (7);
- Developing countries and other regions deemed to be of similar status. It concerns countries regarded as having a lack of sufficient resources to carry out the projects themselves. In an addendum to the Decree on Green Projects Abroad a group of countries eligible for the scheme is mentioned;
- Countries in Central and Eastern Europe. Up to now the scheme has been restricted to Joint Implementation projects in these countries.

The application of the Green Fund System to projects abroad is more complicated both for the governmental agencies as well as for the Green Funds. The economic and political risk level of projects abroad is higher than for domestic projects. Additionally the assessment of the risk level is far more difficult. Nevertheless a number of quite important projects abroad were certified under the scheme. The projects are situated in China, Netherlands Antilles, Bolivia, Egypt, Ghana and Romania. Projects in Estonia, Indonesia, Costa Rica, and Aruba are under process. The projects invested deal with nature conservation, eco-tourism, organic agriculture, wind energy, solar energy. The value of the projects amounts to approximately 60 million EU.

10 Conclusions

The Green Fund System as introduced in the Netherlands has some major advantages:

- the GFS is part of a total system of policy measure. Its success is due to the total system.
- the environmental awareness of public and of banks is promoted,
- the multiplier ratio (public money/governmental money) is approximately 40-50.
- the willingness of the green investor to participate in GFS is much higher than in any other Green Fund System and it made huge amounts of money available in favour of green projects,
- the soft loans under the GFS in The Netherlands create better economic circumstances for green projects,
- it strongly promotes the investments in new green projects,
- a successful co-operation of the financial sector and the government is achieved,
- it is a system with low administrative and processing costs, .
- The major disadvantages (limitations) of the GFS are:
- the GFS is limited to soft loans,
- the GFS is restricted to self-supporting projects.

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4. SITE INSTRUMENTS

Processing and Marketing of Local Products – A Mechanism to Fund Environmentally Friendly Land Use

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1 Introduction

The international UNESCO "Man and Biosphere Programme (MAB)" was established in 1970 as a scientific approach for a better understanding of the relations between human activities and their influence on the environment. This task shifted to a political programme along with the AGENDA 21 (UNCED Conference in 1992) outlining sustainability as a future development strategy. Biosphere Reserves (BRs) are areas of terrestrial or coastal ecosystems that are internationally recognised within the MAB-Programme combining research on man-biosphere-relations with sustainable development to achieve a balanced relationship between people and nature. Presently there are 368 BRs in 91 countries, representing diverse biogeographical regions.

Up to now 14 biosphere reserves in Germany are included in the network. Five of them include National Parks.

They represent the major landscapes in our country: the north sea coast, the Baltic sea islands, the river lowlands, may it be natural rivers or historic canal-systems, the low mountain ranges -which are represented best within the network- and the alpine region.

The Laender (state) governments are responsible for biosphere reserves whereas the federal government provides only the framework legislation.

2 Rhoen Biosphere Reserve: major goals and problems

Now let me invite you on a trip through the Rhoen Biosphere Reserve with regards to the economic side of a sustainable development. People, projects and strong partnerships.

The Rhoen is in the centre of Germany, in a low mountain area with traditionally cultivated landscape and has been designated as biosphere reserve in 1991. The area covers some 185,000 hectares.

The Rhoen includes parts of the three federal states of Bavaria, Hessen and Thuringia. Thuringia.

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About 122,000 people live in the Rhoen biosphere reserve altogether, mainly in small villages. The Rhoen is a rural region and relatively far away from large conurbations.

Due to the harsh climate, poor soils and in some parts highly fragmented property structures much of the Rhoen is defined as -economically speaking- low quality grassland and arable land.

On the contrary the landscape is regarded to be of high quality on a federal and even European level as to its biodiversity. Habitats for numerous rare and endangered plant and animal species are the result of a long history of traditional land use. Most of the land is privately owned.

Sustainable development in the Rhoen concerns mainly the maintenance of the landscape and its traditional land use on a sound ecological and socio-economic basis.

However number of farms especially in the Hessian and Bavarian part of the Rhoen is constantly decreasing due to economic reasons. This induces a process which is of major concern for the biosphere reserve idea:

The land which is abandoned will only be partly absorbed by other farms.

A case study scenario has revealed that by the year 2014 more than 50% of a village's pastures and meadows are likely to become fallow land because of the present social and economic structure of the farms.

The alternative would be afforestation, but anyway, many precious habitats for rare plant and animal species would be lost.

What is more, the region's charming open and diverse landscape, which is again the basis for tourism (as an important economic factor) would be seriously affected by this land use change.

The most important task is to keep up a compatible and thus sustainable agriculture in the area, within the framework of the EU agricultural and structural policies.

This is regarded as the main goal among others listed in the trilateral framework management plan which has been elaborated just after the designation as biosphere reserve. Transboundary objectives for all different land use activities have been elaborated and discussed with all interest groups of the region. The outcome is a framework management plan which is based on a broad consensus but has no legal status.

2.1 Strategies and actions

Possible strategies in order to reach the overall goal, are seen in first "direct" and second "indirect" increase of landscape value.

2.1.1 *Direct increase of landscape values*

Direct increase of landscape values works through direct marketing of agricultural products which have been produced in an environmentally sustainable way. This helps stabilising the farmers' income. I'll give you three examples.

2.1.2 Rhoen sheep project

The Rhoen sheep is a traditional breed, well adapted to cold and wet climate and rough grazing. Up to 1950 within the whole of Bavaria there were 30000 registered Rhoen sheep ewes. The meat quality of this breed is regarded as excellent, the animals however take too long to grow. It was due to economic reasons that the number of Rhoen sheep dropped dramatically to only 300 registered ewes in 1970. Eventually the breed became listed in the red data book for endangered domestic animal breeds.

Thanks to the initiative of a nature conservation NGO, a farmer in the Rhoen was encouraged to keep a herd of 40 Rhoen sheep ewes in 1985. This "in-situ-conservation" of an endangered breed was however not at all economically sustaining.

With the designation of the Rhoen as a biosphere reserve the direct marketing of agricultural products has become an important issue.

A cooking competition organised by the biosphere reserve association made some the regional restaurant owners become interested in Rhoen sheep products.

By now, several Rhoen sheep producers raise about 2000 ewes in the three parts of the Rhoen. The number still does not satisfy the increasing demand for Rhoen sheep lamb in the region and caused the meat price almost double since 1985.

Seed money from the European Structural Fund (the so called LEADER-Programme) made this possible together with long term nature conservation funding programmes for sheep grazing. Since recently a mail order firm offers clothing made of Rhoen sheep wool.

2.1.3 The Rhoen apple initiative

A similar project concerns fruit orchards which are a typical feature in the Rhoen landscape, may it be around the villages or in the countryside. Since there has been an increasing demand for standardised fruit according to the EU-criteria, the traditional varieties are no longer competitive on the markets. This caused the number of traditional orchards decrease dramatically throughout the country.

1996 a local initiative for the conservation of orchards set up a project in co-operation with the three biosphere administrations in order to conserve the fruit orchards.

With the help of the EU-LEADER programme and a private sponsor who was looking for new soft-drink products, an extensive inventory of the genetic potential of fruit varieties was carried out. Everyone who grows fruit trees was invited to let fruit specimen be identified by hired experts. The result was impressive: 170 apple varieties, 38 pears and 12 plum varieties were found in the Rhoen.

The idea was born to sell and process these fruits which have been produced according to the criteria of biological farming without the use of pesticides or chemical fertiliser. Apple juice and other soft drinks apple-"Radler" (a mixture of beer and apple juice), apple chips, apple champagne, schnaps, cider, vinegar and other specialities appeared on the market.

The selling price for apples from traditional orchards has increased four times compared to the beginning of the 90ies.

What is important to mention is the formation of new organisation structures which helped the private sector to develop.

The initiative "From the Rhoen -for the Rhoen", founded in 1994, is a co-operation of 54 regional farms, restaurants, breweries, butchers, fruit press and mineral water enterprises. The restaurants promote the use of regional products in their business.

2.1.4 "The Rhoen wood processing project"

The third example of projects supporting the "direct" value to landscape refers to forestry.

Most of the Rhoen would be covered naturally by beech forest. Wood has always been an important resource in the area.

Sustainable woodland management which guarantees habitat, scenic, protective values besides its economic aspects has been a guideline for wood production not only in the biosphere reserve but throughout Germany and has been the basis of our Waldgesetz (forest act) since long.

In the Rhoen sustainable wood production involves especially the promotion of native tree species such as beech or sycamore.

In order to increase the economic potential in wood processing especial of broad leafed trees, seven local carpenters, two saw mills, the forestry commission in Hessen and the biosphere reserve association have started an initiative in 1997, which is called "The Rhoen wood processing project".

The use of beech wood for furniture, floors, doors etc. is promoted, guaranteeing the consumer that the timber comes from a sustainable woodland management in the region: with natural regeneration of young forest instead of plantations, no clear cuts and no use of pesticides.

The effects of the presented projects are:

- an increase of income for local enterprises and hopefully creating new jobs in the long run
- the reduction of transportation of goods and the heavy traffic involved
- the knowledge about genetic agricultural resources has increased, their economic potential ensures their long term conservation
- wildlife habitats will be protected through sustainable management of both forests and open land
- new regional products are appreciated by tourists as well as by local people.

2.1.5 Indirect increase of landscape values

Since agriculture and forestry will not survive in the long run on primary production only, new partners need to be found, such as nature conservation and tourism. The integration of the service sector is an approach to increase landscape values "indirectly". Successful examples are the following:

2.1.6 Women qualification project

The Hessen Ministry for Women and Family affairs has launched a two-years training project in 1995 which was aimed at qualifying women in rural areas who wish to start their own business. 14 women with different professional background took part, each of them followed her own project idea. According to their needs and goals, extern consultants were hired and a seminar programme has been set up.

Excursions to other regions helped the participants learn from projects in other parts of the country and even abroad. The outcome of the project was extraordinarily successful since each participant has finally created her own project: e.g. a farm shop, farm animation programmes especially for small children, farm holidays designed to fit the needs of the handicapped etc.

After the qualification programme had finished, the participants founded an association in order to keep in touch, share experience, co-operate and encourage others to start with similar projects.

2.1.7 Training of landscape guides

Improving the understanding of the problems of landscape conservation is the main task of environmental education in the Rhoen BR, aimed local people, especially children and visitors. Work camps, guided walks, excursions are organised in co-operation with existing education institutions (schools, evening schools for adults, youth organisations etc.). However we do not have the personnel to actually carry out this programme.

Therefore the biosphere reserve administration together with the administration for agriculture and the funding through the EU programme LEADER, has in 1993 trained interested citizens, especially farmers, who live in the area, to work as private landscape tourist guides. The subject matter taught in the 6 months evening course concerned basic knowledge of the natural and cultural history of the Rhoen, the biosphere reserve, the land use and actual issues. Together with his/her individual experience and background, each landscape guide offers special activities such as farm visits, natural history excursions, activities as bread baking, honey making.

The landscape guides work on their own account and can be hired by tourist groups. Although unfortunately not all people who have been trained actually are prepared to offer this service now, we still think it was worth the effort. It promoted in fact other people, too, to join the yearly programme of activities. All who wish to offer a service pay a small fee in order

to be included in the programme which is compiled by the three biosphere reserve administrations and printed and distributed by the regional tourist boards of the three Länder.

The effects the two projects are:

- they provide the basis for additional income for local people
- diversify the professional structures in the rural area integrating the service sector
- provide new attractions for both visitors and local people

integrate environmental education in regional development

2.1.8 Creating a platform for business partnership

The initiatives, mentioned above, are just pilot projects depending on a few local actors. Furthermore, consumers do not necessarily notice that the products are linked with the biosphere reserve.

Instead of focusing on product labels (the ongoing discussion about this for years has finally been given up) the BR has been looking for business partners to contribute to the biosphere reserve idea in terms of innovative and environmentally friendly products, and to help create or secure jobs in our rural area.

The „BR Business Partners“ project was initiated by the Hessian administration of the Rhön BR in 1998 and has a transboundary approach.

It involves all types of enterprises e.g. farms, restaurants, hotels, grocery stores, crafts, tourist agencies or riding stables.

What are the criteria?

„BR Business Partners“ in agriculture meet the EU Council Regulation (EC) for organic production of agricultural products and indications, including livestock production (No 1804/99, former No 2092/93). This (already existing) criteria was fairly easy to agree upon.

„BR Business Partners“ in catering meet criteria which were to be set up together with local and external experts – a process which took about two years.

Criteria for regional grocery stores are being developed. Restaurants and grocery stores need to offer a minimum number of products which again - come from „BR Business Partners“. Thus links between the different business types are strengthened.

„BR Business Partners“ do not necessarily need to be situated inside the BR as long as they contribute to the BR idea. This aspect is important as it creates links between the BR and the adjacent regions.

If needed, all criteria for „BR Business Partners“ will be adjusted as the project develops.

How are „BR Business Partners“ organised?

All enterprises wishing to become „BR Business Partners“ apply to the Private BR association (Hessen). If they meet the criteria they are authorised to use the partnership sign, however they need to become a member of the BR association first. „BR Business Partners“ are controlled by an independent agency. Where possible already existing control systems (e.g. EU control system concerning organic farming, EU eco-management and audit scheme) will be applied.

By now twenty farms and one brewery have become „BR Business Partners“, ten restaurants have applied.

As a further step the Rhön BR is trying to combine the „BR Business Partners“ with an overall concept of BR labelling, which should:

- be product/ service related rather than just related to enterprises,
- enable the marketing of a variety of regional products in (regional) supermarkets, which is an important aspect as most customers do their shopping in supermarkets,
- enable the integration of non-food products or services.

2.2 Lessons learned

Although the Rhön biosphere reserve has now its 10th anniversary we have only just started establishing a sustainable development in the region.

It has shown to be essential for projects that:

1. multilateral partnerships between and within administration, private sector, research sector and municipalities are built up.
2. there are local actors with courage, visions and enthusiasm
3. they are given a platform for presenting her goods and services (e.g. regional fairs) to draw attention to their projects.
4. they are given adequate moral support by the biosphere reserve administration. We are glad that delegations from other regions in Germany, many different countries in Europe and even overseas have already visited the Rhoen. The public interest in projects and activities makes our local people proud of their projects and encourages them to continue.

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Trade in Medicinal and Aromatic Plants: A Financial Instrument for Nature Conservation in Eastern and Southeast Europe?

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1 Abstract

This paper looks at different aspects of the trade in medicinal and aromatic plants in Eastern and Southeast Europe in order to point out that this herb trade may be one financial instrument for nature conservation in this region. Eastern and Southeast European countries play a significant role within the European and the global herb trade. In particular, Albania, Bulgaria, Poland, Hungary and Turkey are important source countries for this commodity. The trade in these countries is complex, but dominated by a few wholesalers in each country. In the former Eastern Bloc countries, the trade structure changed after the fall of communism, from formerly state-controlled system to a free and diversified market with an increasing number of trading companies. All Eastern and Southeast European countries are a rich and often also a cheap source of medicinal and aromatic plants, for both traditional domestic use and for export. The production of this plant material relies to a large degree on wild-collection with an estimated annual collection of 30,000 - 40,000 t of dry herbs. This results in many detrimental impacts on the natural populations of the medicinal and aromatic plant species. Finally, two examples of the commercial use of medicinal and aromatic plant material linked to nature conservation are briefly discussed.

2 Introduction

Medicinal and aromatic plants are the basis of a wide variety of goods, ranging from pharmaceuticals, phytopharmaceuticals, herbal remedies, homeopathics, medicinal and herbal teas, liquors, spirits, sweets, aromas and essences, perfumes, cosmetics, colouring agents, varnishes, fireworks, to detergents. In particular, Eastern and Southeast European countries are a rich source for these species within Europe (Lange, 1998). The use of many species in folk medicine, the long tradition of herb production of which the majority is obtained from each country's wild native sources, the importance of herbs as export products

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in the former Eastern Bloc, and the expanded trade system are characteristics of many, if not of most, countries in this region (Bernáth, 1996; Lange & Mladenova, 1997; Lange, 1998). Moreover, some of the countries play a significant role in the international medicinal and aromatic plants market (Lange, 1998).

In many cases not the whole plant but a particular plant part is harvested and traded, e.g. roots, stems, leaves, flowers or seeds, as the active constituents are frequently concentrated in a certain part of a plant, or may be found there exclusively. To describe the commodity in trade the terms medicinal and aromatic plant material, herbs or botanical drug are used. Protected areas in Eastern and Southeast Europe have been above all state-financed for a long time, however on a very low level compared to the western economies in Europe (McNeely & al., 1994). The decrease of the public sector funding over recent years and, subsequently, the necessity of generating new financial resources have initiated a debate on how to develop alternative funding mechanisms, above all in the private sector, aiming at limiting the sites' dependence on government subsidies or even at achieving financial self-sufficiency. These areas provide a wide array of valuable goods, which can be exploited and which may provide significant benefits to a number of user groups. Such valuable goods include medicinal and aromatic plant species which inhabit often protected sites in large numbers. Consequently, the question arises, whether the trade in medicinal and aromatic plants may be a financial instrument for nature conservation in Eastern and Southeast Europe.

3 Trade figures for Eastern and Southeast Europe

3.1 Eastern and Southeast Europe's place in worldwide trade

In the 1990s, the reported annual overall importation of medicinal and aromatic plant material, based on the commodity group SITC.3 292.4² *pharmaceutical plants* (Source: UNCTAD COMTRADE database, United Nation Statistic Division, New York), amounted on average to 400,000 t valued at USD 1,243 million. Over this period, the quantities traded doubled from 1991 (269,000 t) to 1997³ (500,000 t). The international trade is dominated by only few countries: 85% of the worldwide importation was channelled to just 12 countries, and 12 countries were responsible for 82% of the overall world's exportation (table 1). Whereas, above all Japan and Korea are real consumer countries, China, India, Chile and Egypt are important suppliers of this commodity. The list of the world-wide most important source countries includes two Southeast European countries, namely Bulgaria and Albania. Together with the

² Standard International Trade Classification Revision 3. Commodity group 292.4 equates to HS (Harmonized Commodity Description and Coding System) 1211 *plants and parts of plants (including seeds and fruits), of a kind used primarily in perfumery, in pharmacy or for insecticidal, fungicidal or similar purposes, fresh or dried, whether or not cut, crushed or powdered.*

³ Complete international trade figures for 1998 have not been available.

USA, Germany stands out as an important trade centre for this commodity, showing both high import and high export quantities.

Table 1: The 12 leading countries of import and export of medicinal and aromatic plant material classified as *pharmaceutical plants* (SITC.3: 292.4 = commodity group HS 1211). The countries are listed according to descending order of average trade volumes, 1991-1998. The European countries are underplayed in grey. – Source: UNCTAD COMTRADE database, United Nation Statistic Division, New York.

Country of import	Volume [t]	Value [USD '000]	Country of export	Volume [t]	Value [USD '000]
Hong Kong	73,650	314,000	China	139,750	298,650
Japan	56,750	146,650	India	36,750	57,400
USA	56,000	133,350	Germany	15,050	72,400
Germany	45,850	113,900	USA	11,950	114,450
Rep. Korea	31,400	52,550	Chile	11,850	29,100
France	20,800	50,400	Egypt	11,350	13,700
China	12,400	41,750	Singapore	11,250	59,850
Italy	11,450	42,250	Mexico	10,600	10,050
Pakistan	11,350	11,850	Bulgaria	10,150	14,850
Spain	8,600	27,450	Pakistan	8,100	5,300
UK	7,600	25,550	Albania	7,350	14,050
Singapore	6,550	55,500	Morocco	7,250	13,200
Total	342,550	1,015,200	Total	281,550	643,200

3.2 Eastern and Southeast Europe's place in Europe's trade

Europe is playing a significant role in the worldwide trade in *pharmaceutical plants*. Its importance is highlighted by three facts: (1) Europe as a whole is responsible for one-third of the annual global importation, and one fifth of the annual global exportation. (2) No fewer than five European countries, all of them EU Member States, are among the 12 leading countries of import. (3) The list of the top-12 countries of export includes three European countries.

The role of the Eastern and Southeast European countries may be described best by the following facts (see also Lange, 1998):

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- From 1991 to 1998, the overall European import of pharmaceutical plants amounted on average to 123,600 t valued at USD 21.3 Mio. The shares of all Eastern and Southeast European countries were, in terms of volume, only 7.5% and, in terms of value, even below 6%. Most imports, almost 90% of the total European import, were destined for EU countries.
- The average annual quantity of pharmaceutical plants exported from Europe in 1991-1998 amounted to 67,800 t. In contrast to the import, the export is dominated by Eastern and Southeastern European countries which account for 50% of the total volumes exported from Europe. However, the Eastern and Southeast European share of Europe's total export value of USD 62.3 Mio is only about 25% reflecting the low prices achieved for the material exported (see below).
- Europe is clearly divided into source and consumer countries. Many of the Eastern and Southeast European countries are important source countries for the commodity *pharmaceutical plants* showing a high negative net import, above all Albania and Bulgaria, followed by Hungary, Poland, Turkey, the Czech Republic, Croatia, and Romania (figure 1; Lange, 1998). Their net imports range on average between 1992-1996 from about -1,000 t to -7,000 t (Lange, 1998). Figure 1 also indicates the consumer countries within Europe showing high positive net imports. These countries are led by Germany with an average net import of 30,000 t in the same period, followed by France, Italy, the United Kingdom, and Spain.
- In general, the Eastern and Southeast European countries are a cheap source for botanical drugs (see above). On export, the average price per ton amounted to USD 2,078 in 1998 equal to only two third of the European export price of USD 3,225. Moreover, this figure is less than the half of the German (USD 4,632/t) and French (USD 4,950/t) export prices, and only 1/5 of the Swiss export price (USD 9,930/t) which is the highest within Europe. However, there are some differences between the Eastern and Southeast European countries. In 1998, the value of the plant material exported from Poland was highest amounting at 2,605 USD per ton. On export, Bulgaria still achieved USD 2,295/t and Hungary 2,015 USD/t. The lowest prices, only USD 1,535-1,540/t were paid for the commodities exported from Turkey and Albania.
- Most exports of the Eastern and Southeast European countries are destined to Germany (Bernáth, 1996; Lange & Mladenova, 1997; Lange, 1998). In 1996, Germany imported over 20,000 t of pharmaceutical plants from these countries, which represented 64% of the total exports of east and southeast Europe. Germany's imports were six times more than those of France or Italy, and 10 times more than those of Spain (Lange, 1998).

The intra-European drug trade is dominated by Germany, acting as a link between the Eastern and Southeastern European market and the rest of Europe, as its exports are destined above all to Central, Western and Southwestern European countries.

3.3 Trade figures for selected Eastern and Southeast European countries

Export: Eastern and Southeast European countries exported 1998 56,020 t of the commodity *pharmaceutical plants* (table 2). This represented 56% of the overall European export in that year, and not less 17% of the global export. The value of the exported plant material amounted to USD 116.4 Mio equal to 36% of the European export value and 12.4% of the global export value. Within the region, the leading country of export is by far Bulgaria, which exported 15,450 t in 1998 valued at USD 35.4 Mio, followed by Poland showing export quantities of 10,240 t valued at 26.7 Mio, Albania (8,210 t, USD 12.6 Mio), Hungary (6,170 t, USD 9 Mio), and Turkey (4,480 t, USD 9.5 Mio). The export quantities of these five countries made up 80% of the overall export of all Eastern and Southeast European countries in that year.

To assess the development of the quantities exported from East and Southeast Europe during the 1990s is difficult, due to unavailable trade figures in the beginning of this period for some of the countries, and due to the trade changes at that time. However, from 1995 onwards, the overall export quantities increased by almost 40%, from 40,450 t to 56,020 t in 1998 (table 3). During the 1990s, Bulgaria increased its exports of *pharmaceutical plants* by three times from 5,140 t in 1993 to 15,450 t in 1998. Poland's exports also showed a comparable increase, from 4,260 t to 10,240 t. Hungary, before 1990 for a long time the most important supplier of medicinal and aromatic plant material to the European market showed no increase, its exports fluctuated between somewhat below 4,000 t to 6,170 t, but were in general lower than in the beginning of the 1990s. At least, Turkey's exports were 1998 only one third higher than 1993.

Import: In contrast to the export, the imports of medicinal and aromatic plant material to East and Southeast European countries are in general low. In 1998, only 15,220 t of the commodity *pharmaceutical plants* valued at USD 34.6 Mio have been imported to the whole region, which is - compared to the 56,000 t resp. USD 116.4 Mio plant material exported - less than one third (table 2). Furthermore, the share of the overall European import was less than 10%, and only almost 4% of the global importation. Whereas many countries showed nearly none or little imports during the 1990s, such as Bulgaria, Albania, Romania, Lithuania and Latvia, there are Croatia and Turkey with annual imports ranging from 500 t to 1,000 t. Only, Hungary, Slovakia, Slovenia, the Czech Republic, and above all Poland showed considerable annual imports during the 1990s. In 1998, the leading country of import was Poland importing 3,460 t valued at USD 7,9 Mio, followed by the Russian Federation with 2,560 t of a value of USD 8.5 Mio (table 2). The imports of four further countries, Slovakia, the Czech Republic, Hungary and Greece, exceeded 1,000 t.

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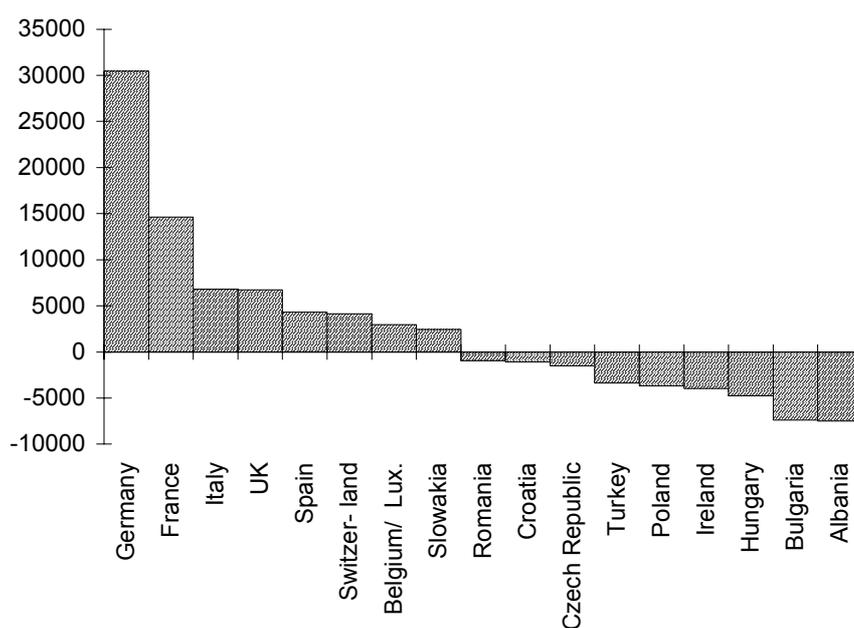
Table 2: Export and import figures of medicinal and aromatic plant material classified as *pharmaceutical plants* (SITC.3: 292.4 = commodity group HS 1211) of Eastern and Southeast European countries in 1998. The countries are listed according to descending order of average trade volumes. - Source: UNCTAD COMTRADE database, United Nation Statistic Division, New York.

Country of export	Volume [t]	Value [USD]	Country of import	Volume [t]	Value [USD]
Bulgaria	15,450	35,442,000	Poland	3,460	7,865,000
Poland	10,240	26,664,000	Russian Federation	2,560	8,473,000
Albania	8,210	12,605,000	Slovakia	1,980	1,123,000
Hungary	6,170	9,029,000	Czech Republic	1,770	5,131,000
Turkey	4,480	9,490,000	Hungary	1,190	2,427,000
Czech Republic	2,630	2,424,000	Greece	1,100	1,568,000
Yugoslavia	2,350	3,985,000	Slovenia	660	2,095,000
Macedonia	1,860	4,744,000	Turkey	580	1,267,000
Romania	1,380	2,935,000	Croatia	560	1,480,000
Croatia	1,260	2,937,000	Macedonia	480	851,000
Greece	1,050	1,506,000	Albania	250	48,000
Slovakia	480	1,052,000	Lithuania	250	1,008,000
Total: E+ SE-Europe	56,020	116,436,000	Total: E+ SE-Europe	15,220	34,616,000
Total: Europe	99,230	320,026,000	Total: Europe	160,617	505,847,000

Table 3: Export quantities of medicinal and aromatic plant material classified as *pharmaceutical plants* (SITC.3: 292.4 = commodity group HS 1211) of the five most important source countries of Eastern and Southeast Europe in the period 1993 - 1998. The figures in brackets are not complete. - Source: UNCTAD COMTRADE database, United Nation Statistic Division, New York.

Export	1993 [t]	1994 [t]	1995 [t]	1996 [t]	1997 [t]	1998 [t]
Bulgaria	5,140	9,050	10,500	10,790	13,810	15,450
Poland	4,260	4,810	5,390	7,400	8,920	10,240
Albania	n.a.	n.a.	7,960	6,870	6,300	8,210
Hungary	5,430	3,950	5,360	4,080	n.a.	6,170
Turkey	3,340	3,230	4,160	3,700	4,280	4,480
Total: E + SE-Europe	(24,300)	(27,260)	40,450	38,400	(42,280)	56,020

Figure 1: Net import of medicinal and aromatic plant material of selected European countries in 1996. The quantities are given in tons.



4 Trade structure in selected Eastern and Southeast European countries

The structure of trade in medicinal and aromatic plant material in East and Southeast Europe is complex and varies from country to country depending much on the importance of this market for a given country (Lange, 1998). In general, the trade in medicinal and aromatic plant material is dominated by a few wholesalers in each country (Lange, 1998). The major players in this trade belong to the former Eastern Bloc. The trade structures in these countries show some common features, as the botanical drug trade has changed in recent years coming along with the fall of communism. It changed from strictly organised and state-controlled trading systems, based mostly on country-wide networks, to free and diversified markets, with an increasing number of competing, multiple private trading companies (Bernáth, 1996; Lange, 1998; Kupke & al., 2000). Meanwhile, in many cases, the former state-owned companies have been dissolved, or are no longer in a position of primacy. Hungary, Albania, Bulgaria, and Romania are characteristic examples for the trade structure and the its recent changes in East and Southeast Europe and are therefore discussed in the following.

In **Hungary**, these changes in the trade structure have taken place over the past two decades (Bernáth, 1996; Lange, 1998). Until the 1970s, only one wholesale company dealing with medicinal and aromatic plant material, called Herbaria, had existed in Hungary. It controlled the collection and cultivation of the plant material within the country and purchased it. In addition, until 1982, only one company, Medimpex, had been authorised to export the commodity. This extensive system enabled a high degree of quality and quantity control, as the company's network operated country-wide even in the remotest part of Hungary. After the end of communism, a great number of companies purchasing and trading in medicinal and aromatic plant material have evolved. In 1991, 70 companies could be counted. The same applied to the export, as since 1991, any firm with an export licence has become eligible to export the plant material. However, many of these companies were new in this business, and primarily motivated by profit, or better by the intention to make easy profit. Meanwhile, many of them have closed down, and according to Bernáth (1996) only some will remain. This trend of concentration can also be observed in Western and Central European countries (Lange, 1998). The Hungarian export in botanical drugs is mainly to Germany (Bernáth, 1996).

In Albania and Bulgaria this development started much later than in Hungary. In **Albania**, the trade structure was hierarchically organised until 1992. The dried plant material gathered by rural people, was collected by local branches of the District Collector Enterprises. Another body, the District Forestry Enterprise, had the responsibility for collecting the plant material from cultivated areas and forests. If not for use within the country, the dried plant material came under the control of the Agroexport Enterprise. From 1994 onwards, the number of private operators in this trade has proliferated, but until today, still rural collectors sell the commodities to local dealers, who again sell it to district traders, and further to one of the four main companies involved in international trade. In general, Albanian trade in medicinal and aromatic plant material is mainly oriented towards export. Prior to the 1990s, the country

mainly exported to the former Yugoslavia and the former German Democratic Republic. Nowadays, the main export destinations are Germany and Italy. Albania is the main source of sage (*Salvia* spp.) for the European market (Lange 1996, 1998).

In **Bulgaria**, until 1990, purchase and trade in as well as production of medicinal and aromatic plant material were carried out exclusively by two state-controlled united cooperative enterprises, named Bilkocoop and Bulgarcoop (Lange & Mladenova, 1997). They purchased the commodity through other cooperatives distributed throughout the country. After the fall of the communism, both cooperative enterprises continued to operate, but, at the end of 1996, Bilkocoop became part of Bulgarcoop which is still the market leader (Lange & Mladenova, 1997). In addition, during the last years, 50-60 smaller, private, mostly family-owned companies have become involved in the collection, purchasing and export. The new private companies purchase plant material mainly for export. However, there is a great fluctuation in these companies, as many of them have stopped to exist until now (Lange & Mladenova, 1997; Lange, 1998). 60-70% of the trade in this plant material is directed to export, with the main destination being Germany (Lange & Mladenova, 1997; Lange, 1998).

During time of communism, the state-owned company Plafar with its district branches and herb purchasing centres scattered across the country was the only one responsible for collecting, purchasing and trading of botanical drugs in **Romania** (Lange, 2000). Although since the beginning of the 1990s the state-controlled system of herb trade had broken down up, this company including all branches still exist. Currently, about 10 companies are involved in this business (Lange, 2000). However during the last 20 years, a steady decrease in general herb collecting occurred and the knowledge of medicinal and aromatic plants remained only with old people (Dumitrescu, pers. comm.).

5 Medicinal and aromatic plant material in trade

5.1 Geographical origin of the species in use

In many parts of East and Southeast Europe there is a long tradition in the use of plants for medicinal, aromatic, dying etc. purposes (Lange, 1998; Kupke & al., 2000). In Bulgaria, not less than 750 native plant species, equal to 21% of the total flora, are used in folk medicine (Hardalova, 1997). Of these, 200 to 300 species are most commonly used. In Hungary, some 270 native species are medicinally used, and almost 200 of them are officially recognised by the Hungarian Pharmacopeia (Bernáth, 1996; Németh, 1997). In Albania, 205 native plant species are used as sources for medicinal and aromatic plant material (Vaso, 1997). Özhatay & al. (1997) list a total of 337 native medicinal and aromatic plant species that have been been commercially traded in Turkey since at least 1990.

Based on the results of the investigations on the trade in medicinal and aromatic plant material undertaken in Albania, Bulgaria, France, Germany, Hungary, Spain, Turkey and the United Kingdom (Lange, 1998), it may be estimated that about 2,000 taxa are sources of

A Financial Instrument for Nature Conservation in Eastern and Southeast Europe?

botanical drugs used on a commercial basis in Europe. About two-third of these, i.e. 1,200 - 1,300 species, are native to Europe. A lot of them, above all those of industrial importance, are used in many countries, in particular in Central and Western European countries with a highly developed pharmaceutical, cosmetic and extract-producing industry. Thus, 600 of these species are known to be in use in Germany (Lange, 1996; Lange & Schippmann, 1997). Table 4 shows that most of these plant species are distributed in the Mediterranean countries, such as Italy, France and Spain, as well as in East and Southeast European countries like Romania, Albania, Bulgaria, and Poland. In all, Eastern and Southeastern Europe constitute the range for a total of 436 taxa (Lange, 1996).

Table 4: Geographic range of 558 European medicinal and aromatic plants used in Germany. Eastern and Southeast European countries are underlayed in gray. – Source: Lange (1996).

Geographic region: country	Number of taxa	Geographic region: country	Number of taxa
Italy ¹	511	Hungary	415
France	510	Greece ²	401
Yugoslavia (former)	489	Albania	391
Spain	482	Poland	386
Austria	456	Belgium ³	376
Romania	451	Belarus	357
Czechoslovakia (former)	445	Netherlands	354
Germany	441	Denmark	337
Switzerland	437	Sweden	333
Bulgaria	421	Portugal	330

¹ Excluding Sicily, Sardinia and the Malta archipelago;
² excluding East Aegean Islands and Crete;
³ including Luxembourg.

5.2. Wild or cultivated origin?

Medicinal and aromatic plant material is obtained both from plants growing in the wild and from cultivated stock. In Europe, collection from the wild still plays a vital role in the use of, and trade in botanical drugs, since cultivation has not proved to be provitable for the majority

of taxa in trade (Lange, 1998). This is because (1) many plants are difficult to cultivate, (2) many are required in small quantities, (3) the quality of some wild-harvested material is supposed superior, and (4) the costs for wild-crafted plant material is in general lower than for cultivated material (Lange, 1997).

Within Europe, 130 - 140 medicinal and aromatic plants are cultivated in total (Bernáth, 1996; Verlet & Leclercq, 1997; Lange, 1998). Important crop species are, for example, Pumpkin, Lavender, Mint, Opium Poppy, Caraway, Fennel, Chamomile, and Parsely. In East and Southeast Europe, Hungary and Poland have a long tradition in growing plants (Bernáth, 1996; Lutomski & Gorecki, 1999) and are important suppliers of cultivated medicinal and aromatic plant material to the European drug market. These 130 - 140 plant species include also those which may be obtained from both cultivation and wild stock. Examples are Arnica (*Arnica montana*) and the Yellow Gentian (*Gentiana lutea*). Consequently, in terms of numbers, about 90%, a surprisingly high share of the plant species, are primarily harvested from the wild.

In particular, in Eastern and Southeastern European countries, wild-collection of medicinal and aromatic plants is still playing a pivotal role (Lange, 1998; Kupke & al., 2000). For example, according to Vaso (1997; Lange, 1998), in Albania most of the botanical drugs in trade are sourced through wild-collection. The same applies to Turkey (Atay, in litt., 19.2.1998; Lange, 1998). In Bulgaria, not less than 75 - 80% of the quantity of medicinal and aromatic plant material in trade is obtained from wild stock (Hardalova, 1997), and in Hungary the share amounts to 30 - 50% (Bernáth, 1996). According to Lutomski & Gorecki (1999), in Poland, some 5,000 t plant material is sourced annually from the wild. In Slovakia, Kupke & al. (2000) estimate the wild-collected plant material to 60 - 70%. Based on these figures and on the export figures of 1998 (table 2), the overall quantity of wild-collected medicinal and aromatic plant material in Europe in 1998 is estimated to be at least 30,000 - 40,000 t of dry plant material. The fresh material weighs two to three times more.

The reason that wild-collection remained particularly prominent in Eastern and Southeast Europe is the general low income level in many of these countries. Moreover, collectors of this plant material are, in general, rural people, stockherders, villagers, retired people, or often women and children, who frequently have a traditional knowledge of the plants. For many of them, collecting provides a supplementary income (Lange, 1998). Collecting is done either sporadically or with a prior agreement with a trader.

5.3 Traded forms of plant material

Medicinal and aromatic plant material is traded in most cases in dried form, and to a small extent fresh, or preserved in alcohol (Lange, 1996). Frequently, East and Southeast Europe export, whether cultivated or sourced from the wild, raw material or, at most, coarsely chopped plant material. Raw material or only little processed plant material is much cheaper than that which has been further processed, i.e. rubbed, peeled, powdered, or even extracted. The low prices achieved for this plant material reflect this fact well (see 2.2).

6 Ecological impacts of the trade in medicinal and aromatic plant material

The threats facing the biodiversity of wild medicinal and aromatic plant species in East and Southeast Europe are manifold, and similar to the threat factors facing these species all over Europe or even across the world. Threat factors include over-exploitation, destructive harvesting techniques, lack of international trade monitoring, habitat loss, decrease in or even loss of genetic diversity and alteration (Lange & Schippmann, 1997). The latter is largely a result of changing agricultural practices during the past 100 - 200 years. In addition, there is one and above all a very particular impact on wild medicinal and aromatic plant populations in the countries of the former Eastern Bloc. It is the change of the trade after the end of communism (see 3) and its subsequent deregulation. The formerly centrally organised herb trade and the country-wide networks enabled a high control of collection, purchase and export of herbs. After the fall of communism, the former legal structures did not longer apply, and the governmental instruments to control ceased to exist. This and the recent privatisation of rural lands, the high number of newly evolved companies in this trade and their fluctuation, the influx of unspecialised labour to the business of collecting or dealing in the commodity have been leading to unregulated exploitation and unmonitored export of the plants concerned (Bernáth, 1996; Lange, 1998). As a result, an growing number of medicinal and aromatic plant species has become threatened. Many of them had to be placed under legal protection, which ranges from controlled gathering to strict protection (Lange & Mladenova, 1997; Lange, 1998).

7 Trade in medicinal and aromatic plant material as a financial instrument for nature conservation in Eastern and Southeast Europe

Criteria for to use the herb trade as a financial instrument for nature conservation in East and Southeast Europe, include (1) the occurrence of the relevant medicinal and aromatic plants in sufficient biomass, (2) the knowledge of medicinal and aromatic plants and their use, as well as (3) a domestic use of the relevant plant species and/or trade systems directed to export.

As outlined above, Eastern and Southeast European countries show a high diversity in medicinal and aromatic plant species, and their use has a long tradition in many countries. A herbal „renaissance“ as observed in Central and Western European countries (Lange, 1998; Lange & Schippmann, 1998) has also taken place in some parts of East and Southeast Europe in recent years. Further, more than 400 plant species used in Europe, in particular in the important consumer countries, Germany, France, and Switzerland, are native to East and Southeast Europe (Lange, 1998). These many taxa include only some endemics or locally distributed species, but mainly widely distributed species. As a high percentage of these plants are still wild-collected (see 4.2), there is a traditional knowledge of the plants, the parts used, harvest time and techniques, as well as post-harvest treatment of them. Highly developed trading system for medicinal aromatic plants exist in many East and Southeast

European countries, in particular in Albania, Bulgaria, Hungary, Poland, Romania, Russia, and Turkey.

Collection of medicinal and aromatic plant material within protected areas, may be done in different manners. Either collection is directly paid, or, local people when collecting for their own benefit have to pay fees for using the forestry by-products on the basis of species-specific rates paid per kilogram similar to the system in Bulgarian forests (Lange & Mladenova, 1997). The plant material may be marketed directly by the protected area management through facilities within the area or in the villages in the surrounding. In this case, none or only few middlemen are involved, which increases the profit. However, cleaning and packing, as well as controlling, and, if necessary, blending and/or cutting of the plant material has to be organized by the protected area management, either done by employees themselves or by contracting the work out. Besides direct marketing, the plant material collected within the borders of the protected area may be delivered to the domestic market and further exported. Frequently, exporting the plant material will bring much more benefit, than just selling it to the domestic trade.

The way of marketing will depend on the medicinal and aromatic plant species growing in a given protected area and on their biomass resources. In general, in international trade, traders, wholesalers and import-export-companies prefer to purchase bigger quantities of a herb, as the costly quality controls have to be done for every commodity on import. However, in the trade in *green* commodities (in Germany) relating to a sector of the trade dealing mainly in material from organically-grown plants, but not exclusively, direct importation of even small quantities of plant material seems to be profitable (Lange, 1996, 1998). A co-operation with companies working in this area may be useful, as a lot of small companies are operating in this area, many of them importing directly to Germany. This reduces the costs, the commodity achieves higher prices, and plant material collected sustainably could be marketed as such. Further, it is a growing market which has also expanded to other Western European countries during the last years. Whereas, it is very difficult to lance a new product resp. medicinal or aromatic plant in a consumer country, the trade sector in *green* commodities is open to new ones. During the last years, several new herbs from abroad entered the German market via this trade.

Collection and marketing of medicinal and aromatic plants, as outlined above, may be used as one financial instrument for nature conservation in East and Southeast Europe. In general, it will contribute to improving the acceptance of protected areas if there is a monetary benefit for local people based on products of this area. When the plant material is destined for export, marketing and/or necessary processing should be done in co-operation with a (foreign) trader or producer, to avoid the middlemen and to achieve higher prices. A further aspect is to increase the value of the commodity before export. The benefit is higher, when the plant material is processed, i.e. cleaned, cut, ground or even extracted, as the prices of the products increase with regard to degree of processing (Lange, 2000). A further recommendation is, to collect medicinal and aromatic plant material of a higher value. The

prices for many herbs are very low, only very few USD on wholesale level. However, there are some herbs which achieve higher prices, for example dried Arnica flowers, which have been offered for USD 20 - 50 per kg during the last years.

Before collecting medicinal and aromatic plants in a protected area, investigations on the plant species growing in that area and their biomass resources have to be done in order to develop management programmes including species-specific guidelines for their collection to limit utilisation to sustainable levels.

The idea that the commercial use of biological resources, here the medicinal and aromatic plant material, may be an incentive for the conservation of some ecosystems is often discussed within the context of tropical forests. Instead of deforestation, a revenue is achieved from non-wood forest products. A well-known example for the commercialisation of medicinal and aromatic plant material as a financial instrument for nature conservation, is the Instituto Nacional de Biodiversidad (INBio) in Costa Rica. As an important component in its work to promote the sustainable use of Costa Rican biodiversity, INBio co-operates in its programme on bioprospecting with pharmaceutical companies like Merck (USA), Bristol-Myers Squibb (USA) and Indena (Italy) (Laird, 1993; Sidler 1994; Kate, 1999). Another example is the commercial use of Arnica growing on extensive pastures on top of the Vosges in France within the borders of a nature park (Parc Naturel Régional des Ballons des Vosges). These poor meadows on acid soils, developed through traditional grazing, are threatened here, as well as all over Europe, by alteration, soil improvement, application of fertilizers, woodland encroachment, afforestation, and over-grazing. Also, *Arnica montana* became rare in many European countries, and was consequently protected. Threats facing this species are habitat loss and over-collection due to medicinal use (Lange, 1998). In the Vosges, the collection of fresh Arnica plants by the Swiss pharmaceutical company Weleda (Ellenberger & Leuenberger, 2000), ensures, through grazing on a small scale, the survival of the Arnica populations, and contributes to the protection of a typical landscape with its characteristic vegetation and inventory of plants.

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How Eco-tourism Can Finance Nature Conservation

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1 Introduction



Tourism industry's economy: impressive figures (1999)

Arrivals: 666 million

Annual growth: 4,3% (7% since 1950)

Expenditures: 456 billion USD (without transport)

Expenses / arrival: 685 USD

Employment: 10% of all; for 2008: 375 mill.

Data: WTO/WTTC

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2 The other side of the postcard

Mass tourism / “sun & sea”

- excessive and uncontrolled development of physical infrastructure
- destroys or alters the natural and cultural environment
- Liquid effluents and garbage pollute mountains, rivers, beaches and the sea

Not only developing countries

- loose control over the development of their very own territories
- turn dependant to another type of economic monostructure
- Stay with badly distributed temporary and low skilled employment opportunities
- receive only a little percentage of tourism expenditures

“Leakage”	
World average: 55%	
Nepal	70%
Thailand	60%
Zimbabwe	53%
Costa Rica	45%

3 Another kind of tourism ... looking for the “ECO”

- A concept without a concrete common definition
- Ecotourism is a form of tourism...
 - Is oriented to natural areas with exceptional natural and cultural value,
 - contributes to nature conservation,
 - generates opportunities for the direct participation and benefit of local populations
 - compromises all players to minimize negative ecological and cultural impacts.
- Difficult challenge to turn into reality
- The prefix “eco” is reduced to a PR slogan “ecotourism lite?!”

4 The role of tourism in protected areas

Tourism as an incentive

- National Parks in Europe and North America were founded for recreational purposes (within other objectives)
- Some lately established marine parks owe their existence to tourism
- Visitors put political pressure to enhance conservation
- Protected areas generate funds for the government and the national treasury

Tourism as a threat

- economically: inflation of prices
- ecologically: wildlife disappears, pollution, erosion etc.
- social: nonequal distribution of benefits, alteration of culture etc.
- For tourism itself (self-destruction): pristine places turn out to be artificial and become overcrowded

5 Quantifying ecotourism

“Nature tourism” grows with major dynamics.

- U.S.: 30 % growth of “nature based tourism”, compared to 4% growth of tourism in general
- WTO: in 2000, 86 % of tourism’s growth in total is due to adventure, culture and nature tourism.
- There are no facts and figures about the economy of “pure ecotourism”.
- It is still a small niche in the international tourism market.

6 Generation of funds in protected areas

- Entrance fees
- Admission fees for interpretation facilities
- Use of special equipment
- Permits for taking pictures / fishing / hunting
- Sale of souvenirs, books, postcards, etc.
- Concessions for private companies
- Donations

- Foundations, NGOs, „friends of...“
- Distribution of funds, which are generated outside the protected areas (airport taxes, special fees in hotels, etc.)

6.1 How to generate funds

- Directly on the spot
 - + relation between what you pay and what you get for it; control of the tourism flow;
 - staff, infrastructure, additional costs
- Through tour operators
 - + reduction of costs for administration, hiding the entrance fees in the price of the tour package,
 - condition: relationship of confidence and control
- „Tourism taxes“ for nature conservation (p.ej. Trustfunds in Belize)
- Paying for environmental services from the industry (hotels, operators, etc.)

7 Self-financing through tourism?

- The majority of protected areas does not charge for the admission or have very low entrance fees
- Galápagos, with its extraordinary values is an exception (100 USD entrance fee; 5 million in a year, 2 million for the park and the rest for the national treasury)
- Protected areas with very special attractions (e.g. luxury tourism) can generate enough funds for their administration and management (e.g. diving in Bonaire)
- The percentage of the cost coverage through tourism depends on an intelligent concept, general conditions and luck...

7.1 Effects on the local economy

Direct income

- entrance fees (private reserves)
- lodging
- gastronomy
- services (transport, guides)

Indirect income

- Employment opportunities for the construction and maintenance
- wages
- supply of material, food, souvenirs etc.

Leakage

- 90 % or more of the total expenditure do not reach the local level!
- The quantity of the local income depends on the form of tourism and not on the amount of the total expenses!

7.2 Increasing the local income

- Not only increasing the number of visitors
- Increase the expenditure of every visitor
- Increase the local participation within the tourism industry
- Increase the local consumption of the tourism industry
- Empowerment of local population

7.3 Increasing the generation of funds for nature conservation

- Guarantee the coverage of the cost generated by tourism activities
- Try to generate extra funds
- Generate opportunities for local entrepreneurs
- Create conditions in order to maintain funds in the area and look for new mechanisms to redistribute incomes for nature conservation

8 Ecotourism - an illusion?

Ecotourism is not the one and only solution for financial problems in nature conservation!

It can only be a form of sustainable use when well managed in the full sense of sustainable development!

Therefore, strategic alliances have to be formed, taking into account all stakeholders (PPP and others).

Professional planning and monitoring systems are necessary!

Fund Raising for Protected Areas: The Plitvicka Jezera National Park, Croatia - A Case Study

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The Plitvicka Jezera National Park was amongst the first to be founded in former Yugoslavia in 1949. It is located very close to the border between Croatia and Bosnia-Herzegovina, which was also a border between the Austrian-Hungarian and the Turkish empire during the last centuries. This border situation is one of the most important reasons why the area remained so well conserved. During the time of industrialisation in the rest of Europe, this area was too unsafe, so no permanent settlements or economic utilisation of the forest or the water power occurred. Even at the beginning of the 19th century, the Austrian Military Geographer Fras reports on "five beautiful lakes in middle of the most dense forests at the Turkish border, where the beauty of the waterfalls is exceptionally interesting."

The National Park was founded in 1949 on a surface of 19.412 ha. In 1997 the surface of the park was extended to 29.462 ha. More than 23.000 ha are covered by forests, 4.500 ha are meadows (mainly flower-rich dry meadows in the large karst fields) and only about 200 ha are covered by the lakes that gave the name to the park. The national park could be equally named "Plitvice forest" but its the lakes and their uniqueness that are the most characteristic feature of this natural landscape. At the end of the last ice-age, about 10.000 years ago, there was only a little river running through the valley of Plitvice. But with the warmer climate a fascinating biodynamic process started, the creation of limestone (travertine) barriers.

The are of the Plitvice lakes lies in the central part of the Croatian karst, an area characterised by limestone and dolomite formations. All precipitation in this area run to the underground, on its way dissolving limestone to calcious bicarbonate. When the water appears again in the karst wells of the park, it is highly saturated with calcium hydrogene carbonate. Due to the warming of the water and the photosynthesis of micro-organisms and mosses, the dissolve carbonate becomes unstable and starts to build thin layers on the leaves of the mosses. The older parts of the mosses get slowly petrified and die, the younger

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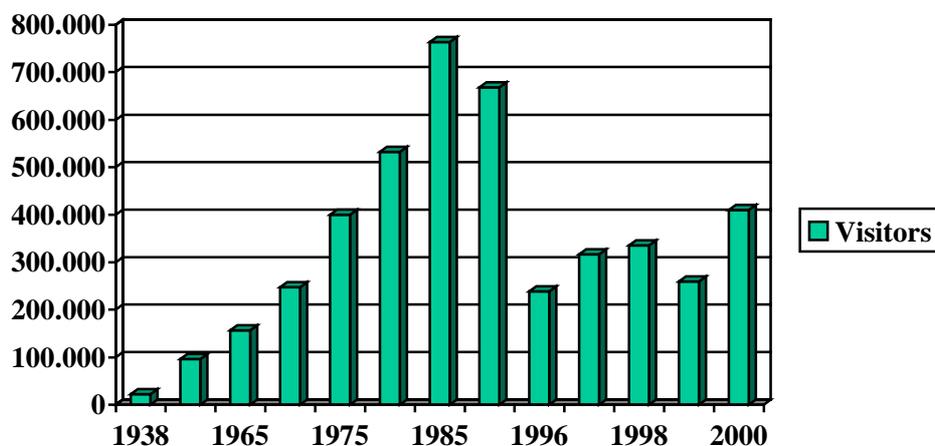
parts continue to grow. In this way, during a long time period, small barriers and steps are build in the river valley by a porous biogenetic rock known as travertine, in which the petrified mosses and plants are still visible. In the last 10.000 years, some of these barriers have grown up to fifty meters and as a consequence a chain of 16 bigger lakes is settled in the Plitvice valley. The unique beauty of the Plitvice lakes is the mixture of smaller and bigger lakes connected with hundreds of waterfalls.

This interesting hydrological system in the normally dry karst can only exist through the forest covering the area. The National Park Plitvice Lakes lies in an altitude between 500 and 1.300 m above sea level and is therefore mainly covered by beech forests mixed forests with beech, white fir and spruce. Due to the historical background, the forests of the park have stayed in a relatively natural condition, some parts like the forest reserve Corkova Uvala even primary virgin forests. Between 1949 and 1990 a large part of the national park forests was extensively managed by selective harvesting of about 30% of the annual increment. Timber extraction was mainly done in the traditional way by horses. Since 1990 the forest in the park are not managed anymore.

In the area of the park there is no hunting but also no winter feeding of ungulates. The population density of the large European carnivores is natural, keeping the forest damages by ungulates to a minimum and allowing everywhere a natural renovation of the forests. The biodiversity both in fauna and flora is high, as the area is close to the climatic border with the Mediterranean.

In creating the national park shortly after World War II, the former Yugoslav did not provide any funding for the park. It was clear from the very beginning that the park was on its own to generate income. As the area was very poor and remote, the complete infrastructure necessary to develop tourism was missing. The financial basis for the necessary investments was created through the harvesting of timber. The high growing stock allowed the National park authority to harvest annually about 50.000 cubic meter of high quality timber without severely damaging the forest structure. As early as in the fifties the income was re-invested in tourism facilities. In the year 1958, the Hotel "Plitvice" was opened, in that time the first Four-Star-Hotel in Yugoslavia. At the same time a complete novelty to European National Parks was introduced - an entrance ticket to a national park.

The lakes are only accessible from a relatively small number of sites. At these four sites parking areas and information points where build, and every visitor had to pay a small fee. All income was re-invested again in new facilities and so the quality improved constantly. Beside the income from forestry, this allowed a regional development of a poor rural area to start

Box 1: Visitor numbers 1938 - 2000

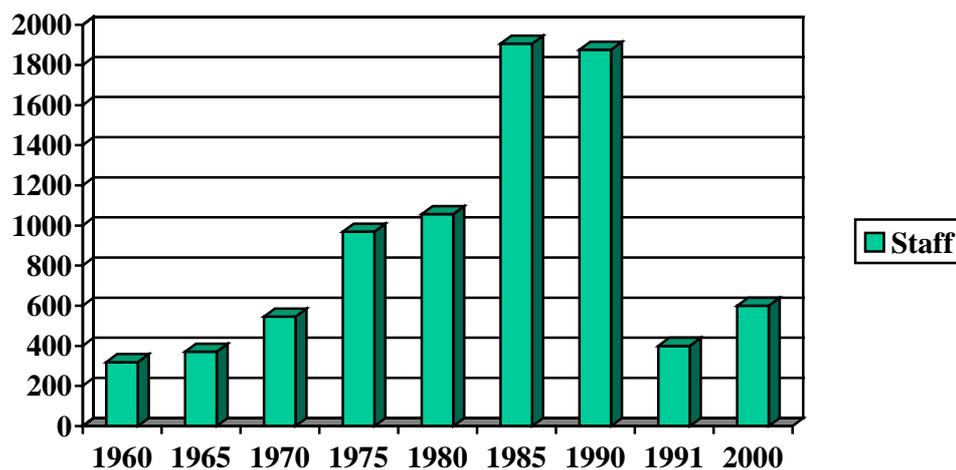
that is unique in Europe. Due to the growing interest of European tourists in Yugoslavia the number of visitors was constantly growing. New methods of visitor management were developed in 1972, when the former main road was closed for public traffic and a shuttle bus as well as an electric boat introduced to allow a higher number of visitors in the relatively small lake area. Through the new services additional income could be generated that was re-invested in the park facilities but also in the economic development of the wider region. In the year 1990 the public company "National Park Plitvicka Jezera" owned nine hotels, three camp-sites, 80 shops in the whole region, a production of wooden houses and a large agricultural unit that had cooperation contracts with almost every farmer in a radius of 100 km around the park. The turnover of this company in 1990 was 91,8 Mill. DM. The income only from entrance fees was about 11 Mill. DM.

Within 25 years a national park that was only financed through timber harvest, developed into an modern enterprise, being the economic centre of the whole region and with more than 1.900 staff members. In the year 1990 the income of timber harvest was only 1% of the general income. This made the decision possible to stop all economic activities in the forest and in this way create a national park that is fulfilling all the criteria for IUCN category II.

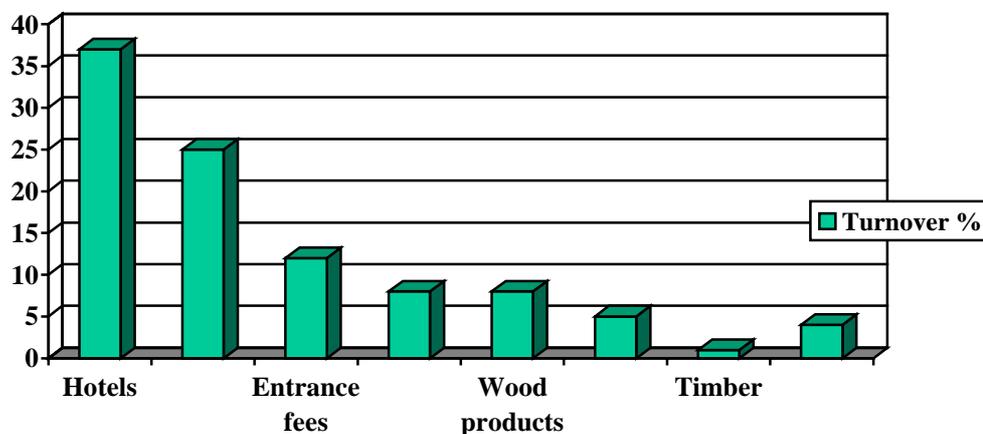
The war activities between 1991 and 1995 stopped all of these developments. The damages done to the National Park and the Company are estimated on about 150 Mill. DM. Since 1995 the new management of the Plitvice Lakes National Park has spent a lot of efforts and money to open the park to visitors again and to create a new basis for economic development. Signs are both, promising and threatening, and it is much too early to state where the new development will lead the park. But the Plitvice Lakes have beside the high

natural value an extraordinary economic potential. If the management succeeds to maintain the values and at the same time use this potential, the National park Plitvicka Jezera could be again one of the most important national parks in Europe.

Box 2: Number of staff in the NP Plitvice 1960 - 2000



Box 3: Turnover structure in 1990



Private Sector Initiatives in Conservation

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1 Biodiversity conservation in Southern Africa

- The conversion of natural habitat to agriculture and other land uses is the main reason for the dramatic loss of biodiversity
- Biodiversity conservation is mainly about protecting natural habitat (ecosystems approach)
- Land owners or land users in poor countries will convert natural habitat as long as private costs of conservation exceed private benefits
- Natural habitat protection depends largely on the land owner's or user's ability to capture conservation benefits

2 Approaches to conservation over time

- Protecting land for wildlife
- Creating systems of public protected areas covering a representative network of ecosystems (biodiversity conservation as goal)
- Community involvement & participation
- Management effectiveness & funding
- Private sector conservation



Table 1: Public protected areas in Southern Africa

Country	Total area (km ²)	Area protected (km ²)	%	No. of protected areas in IUCN category I-V
Botswana	575,000	102,250	17.8	9
Namibia	824,300	103,700	12.6	11
South Africa	1,184,800	74,100	6.3	235
Zimbabwe	390,300	30,700	7.9	25
Total	2,974,400	310,750	10.4	280

Source: McNeely et al. (eds.) (1994): Protecting nature: regional reviews of protected areas. IUCN, Gland

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3 Ecological problems of public PAs

- **Threatened ecosystems.** Not all ecosystems of the region are equally represented in the system of protected areas
- **Incomplete ecosystems.** Park boundaries are often not in line with modern principles of protected area design, leaving key areas of ecological importance unprotected
- **Park size.** Although many parks in the region are very large by world standards they are nevertheless too small for many migratory wildlife species. Probably no area in the region is large enough to hold a fully protected but unmanaged elephant population
- **Ecological isolation.** Many protected areas are islands of natural habitat. Isolated and fragmented populations constitute a very real problem for large mammal species

4 Financial and institutional problems

- Public park agencies face declining financial resources due to the shift of policy priorities (reduced protection, ‘paper parks’)
- National institutions
 - are financially dependent on the treasury
 - are inefficient in terms of:
 - raising funds from internal (e.g. park entry fees) or external sources (e.g. donations)
 - Cost-efficient spending of funds



Private or parastatal park agencies tend to be more efficient in raising and spending of funds partly due to their financial independence

Table 2: Protected area budgets in Africa

Countries with	Budget (US\$ 1996)	Protected Area (km ²)	Budget US\$ / km ²
Parastatal park agencies	76,404,053	137,359	556
Government agencies	20,626,985	538,202	38

Source: James et al.(2000): Parastatal governance of state owned protected areas in Africa and the Caribbean. In: The Design and Management of Forest Protected Areas – Papers presented at the Beyond the Trees Conference 8-11 May 2000, Bangkok/ Thailand (WWF), Gland, pp. 175-185

Table 3: Tourists’ willingness to pay for entering Etosha National Park under different park management scenarios (US\$/day)

	Current entry fees	Scenario I Private management	Scenario II Government management
Local visitors	3	8.1	3.4
Foreign visitors	6	14.1	10.4

5 Why private sector involvement?

- To protect natural habitat on private land
- To mobilise additional financial resources for state or communal conservation programmes
- To benefit from private sector know-how in managing protected land (e.g. through private-public partnerships)
- Because the private sector is more effective in capturing the economic value of conservation
- Because the private sector is more successful in conserving populations of endangered species
- Because private sector is willing to invest in biodiversity related enterprises

Share of private land in Southern Africa

South Africa	73%
Namibia	44%
Zimbabwe	35%
Botswana	6%

Defining “private sector“

- Private individuals
- Corporations
- Private organisations and trust funds

⇒ national and global private sector (allow for foreign investments!)

Motivations for private sector investments

- Profit oriented investors (tourism or agriculture oriented investments with conservation benefits)
- “Green image“ motivated investors
- Altruistic motivated investors

Table 4: Possible private sector involvement

Land ownership Land management → ↓	Private	Communal	State	Open Access
Private	e.g. private reserves, game ranches and conservancies	e.g. concessions and joint-ventures	e.g. concessions	
Communal	-	conservancies	e.g. grazing rights	
State	-	-	Public protected areas (e.g. national parcs)	
Open Access				

6 Privatisation options in PAs

Sectors that can be privatised

- Tourism management
- Park management
- Financial management (turning the park into a financially independent institution)

Note

- To ensure that the private sector complies with the conservation objectives is simply a matter of ‘good contracts’, monitoring and external control
- Privatisation offers the chance to separate management and control, turning the private sector into the managing agency and the government into the controlling agency (Remember that there are often no institutions controlling the government managing parks!)

6.1 Possible Steps of Privatisation

- Privatised tourism management (e.g. hotels)
- Hand over individual park management services to the private sector (e.g. monitoring, anti-poaching control)
- Hand over all park management services to the private sector - Government remains in charge of decision making and pays the private sector for the services
- Lease the park to a private company - Private company in charge of management, decision making and bears the financial responsibility
- Sell the park under strict conditions regarding park and tourism management

7 There are 19 ways to subvert privatisation! (see article by Dr. McFarguhar)

6.3 Conservation benefitting instruments to protect private land

Game ranches

- Extensive use of multiple free-ranging wildlife species on extensive tracts of natural range sometimes combined with livestock (size: 1,000-20,000 hectares)
- Sources of income: sustainable wildlife utilisation (hunting, culling, live game trade, tourism)

Conservancies

A conservancy consists of a group of farms on which neighbouring landowners or members have pooled resources (natural or financial) for the purpose of conserving and using wildlife sustainably. Often members practise normal farming activities and in combination with wildlife conservation. Conservancies are managed and operated by members through a committee (size: 100,000-326,000 ha)

Private nature reserves

- Focus of non-consumptive use of wildlife (size: 20,000-175,000)
- Sources of income: tourism, donations, sustainable hunting
- Self-defined protection levels

6.4 Scale of the industry

South Africa

- 18-24% of the private land is under wildlife use (160,000-207,700 sq km)
- Probably almost 1,000 private game reserves
- More than 350 conservancies

Namibia

- 15-25% of the private land is under wildlife use
- More than 400 registered game ranches
- 148 private game reserves (> 760,000 ha)
- 22 private conservancies (over 450 farms involved covering more than 2 million ha)

Zimbabwe

- 75% of ranches in the drought-prone areas incorporate wildlife as a farming enterprise
- Wildlife Producers Association: 1,200 members (800 non-consumptive use and 400 consumptive use)
- Various conservancies and private game reserves

5. Example: NamibRand Nature Reserve in Namibia

- Founded 10 year ago
- 175,000 hectares next to Namib Naukluft National Park (common border of 120 km)
- A group of nine investor financed the purchase of land and infrastructure development
- Returns from ecotourism cover the running costs of the reserve
- Conservation objectives are much stricter as in national parks
- The country's most experienced game wardens have been head-hunted
- More than 1,500 km of farm fences have been removed
 - Legal status: private farmland

3 Why does the private sector invest in wildlife?

- Well defined property and use rights over land and wildlife resources
- Farmers have the right to use and wildlife and are allowed to trade live game and wildlife products
- Markets for:
 - Wildlife and wildlife products
 - Wildlife viewing tourism
 - Market for non- are economically viable due to strong international demand for wildlife viewing use values (private reserves allow for markets!)
- Wildlife enterprises / safari hunting and local demand for game meat

4 The environmental contribution of private conservation initiatives

- Protection of natural habitat or conversion of formerly agricultural land to wildlife habitat
- A minimum of 14 million hectares of private land in under some form of private protection (half the size of the UK, half the size of PA network)
- Private game ranches and private parks have created corridors between public protected areas
- In some areas private parks and game ranches represent the last fragments of natural vegetation and refuges for endemic species
- Private parks and game ranches cover ecosystems that are poorly represented in the existing system of public protected areas

The Namibian example: since 1967

- Wildlife populations on private land increased by 70%
- Species diversity among larger mammals increased by 40%
- Over 80% of Namibia's wild mammals life on private land

5 The role of governments

- No financial support (no subsidies)
- No assistance in establishing or promoting private sector conservation (exception: conservancies in Namibia and South Africa)
- Little regulation of wildlife trade (positive impact!)
- Monitoring of sustainable use & populations
- Various perverse macroeconomic policies

6. **Barriers to private investments**

- Perverse economic incentives (e.g. perverse subsidies)
- Lack of an appropriate legal framework that gives private reserves a legitimate status
- Lack of governmental support for wildlife enterprises (e.g. subsidies)
- Gaps and overlaps in the institutional responsibilities
- Legal risks of investment e.g. because of laws on the ownership of natural resources and laws governing the repatriation of profits
- Political risks, market risks, project risks EU and North American import restrictions for wildlife products

7. **Critical issues**

- Does the private sector supply biodiversity or key-species?
- Is private conservation a long-term mechanism?
- What is the impact on rural development and local employment?
- Are there conflicts with social or equity objectives regarding large scale private property?

8. **Conclusions**

- Southern Africa is an example of economic forces and markets promoting private sector conservation
- Well defined property rights over land and biological resources are important
- Marco-economic policies and international regulations strongly influence the economic viability of wildlife (e.g. EU agricultural policy, CITES)
- Any policy impairing the economic viability of wildlife as a land use has a direct impact on the private supply of biodiversity

- International demand for biodiversity and wildlife resources is responsible for the private supply protected land
- Private conservation should be seen as additional tool to state conservation
- Governments should aim at removing barriers to private investment to further enhance private conservation

5. STRATEGY FOR FINANCING NATURE CONSERVATION

Financing Protected Areas: Guidelines for PA Managers

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1 Introduction

Sustainable financing is a key concern for most practitioners and managers involved in the conservation of biodiversity and protected areas. While the increasing number of protected areas and tighter public budgets even in developed countries force conservation areas and agencies to look for new sources, the problem is obviously more urgent in developing countries. The majority of the world's biodiversity-rich areas are in nations with a fundamental urge to focus all available resources on social and economic development. Most attempt some degree of conservation. However, the sustainable management of biodiversity as a foundation particularly for the life and future development of poor populations is rarely perceived as an indispensable or fast-enough strategy. Mobilising national and international capacity and awareness thus remains a prominent task of development assistance agencies such as GTZ.

3 Rationale for GTZ's guide on sustainable financing of protected areas

The genesis of the guide is based on the experience that many biodiversity conservation areas and projects can find initial support for the set-up of the scheme or for individual innovative components. However, most fear or experience different degrees of under-financing for the long-term. This has motivated many experiments with a change from a single, traditionally governmental source of revenue to multiple mechanisms, which can already provide lessons for others. Naturally, they come from a fairly broad spectrum of organisational, political and natural conditions.

Experiments include improved conventional instruments such as entry fees, tourism and public and private donations, but increasingly also innovative ones such as charges from water/electricity users, carbon sequestration, eco-taxes and bio-prospecting. While even protected area managers in developed countries find it difficult just to *know* about the instruments and potentials, it obviously poses a substantial challenge for areas under difficult financial and technical conditions. Not to mention that the latter are even more suddenly expected to apply these sources.

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The GTZ-guide is part of a suite of instruments designed to offer assistance for developing a systematic approach to secure a sustainable financial basis. As this has of recently become a very active sector, a wide range of good introduction papers and specific cases studies has been prepared by public and non-governmental (NGO) institutions. However, identifying the appropriate source and obtaining the necessary information appears to be a problem fed back to us from almost all projects.

Rather than reproducing the body of often excellent work, a structured attempt is made to briefly analyse the strengths and weaknesses of the different approaches and help the user to find more information, experience gained by others, and access to new sources. The structure attempts to elaborate on an overview provided in the “Financing Protected Areas” guideline issued by the World Commission on Protected Areas of the International Union for Conservation of Nature (IUCN-WCPA 2000). Another general overview of innovative finance mechanisms can be gained from a study commissioned by the Inter-American Development Bank (Bayon *et al.* 2000). Many useful analyses of financing mechanisms emerge from the sustainable forestry management studies (the best recently were for the EU by Richards 1999 and for UNDP-Profor by Moura Costa *et al.* 1999), though their focus on the economically already more established forestry sector requires substantial adaptive work to be of help for biodiversity financing.

This guide calls on the users to understand sustainable financing as an – important, indispensable, certainly difficult, but in every aspect – integrated part of a comprehensive conservation approach. This requires to:

- work out a viable management concept (including time-frame and planned development),
- determine the associated financial needs, and
- to develop a suitable financing strategy.

It is no coincidence that this sounds like excerpts from a business planning textbook. In fact, most recent publications on protected area finance explicitly stress the advantages of deliberately using professional economic tools for the management of a conservation area or system – after all, they ‘have to make money’, they obviously need to get it from any possible source, and they pin particular hopes on new private sources. Experience shows that managers are more successful in generating and using finances, if proper economic incentives and tools are applied.

All this does not mean to reduce efforts to establish national and international systems of protected area management and finance. On the contrary: it must be emphasised that conservation of biodiversity resources and protected areas *is a fundamental responsibility of the state* which should not lightly be shifted to private and non-governmental entities. Rather, we argue that the state, independent of whether he or non-governmental entities manage an area, establishes the above mentioned national and – together with the appropriate external institutions – international conditions helping him to fulfil his responsibility.

On all levels – local, national, and international – this includes

- transfer approaches for not financially quantifiable environmental services (i.e. public goods),
- market approaches to internalise the economic value of the use of these public goods, and
- mobilisation of private investment flows.

All three are based on the growing appreciation that environmental conservation provides direct and indirect services, and that people and organisations are increasingly willing to pay for such services.

Transfer approaches are based on the realisation that governments have to regulate transfers to ‘pay’ nature (e.g. conservation areas) for providing public good services, e.g. clean air, which are not captured by markets (governmental role to balance market imperfections). This contains such instruments as environmentally substantiated taxes and other fiscal fund-raising measures, tax reform stimulating ecological investment or donations; international development assistance, debt swaps etc.

Market approaches include mechanisms which (partly) reflect the economic value of services provided by biodiversity areas, e.g. user charges for entrance (recreation service), timber extraction or water supply (resource use), or CO₂ sequestration.

Private investment approaches describes mechanisms paying directly for biodiversity use, such as bioprospecting, and other, more indirect ones, such as biodiversity venture funds, which usually do not finance conservation directly. Both bring capital into the sector of the economy working with biodiversity products, thus creating a market value and providing direct or indirect income to biodiversity areas or their peoples.

Again, it must be emphasised that probably none of these mechanisms perfectly reflects biodiversity values, nor do they always send the right political signals in the long run, such as CO₂ sequestration or debt swaps. But they are, at least for a certain time, used to increase funding for conservation and may contribute to a growing willingness to pay through a variety of mechanisms.

4 Structure and navigation in this guide

The guide has two parts. The first part is reflected in chapters 1 and 9 of this paper, calls on the user or project to develop a financing strategy as part of its overall management plan.

Based on an analysis of the needs and existing services (environmental, economic, socio-cultural) provided by a biodiversity area system, the potential users/markets are identified. A strategy (*following IUCN’s ‘business approach to conservation finance’*) is proposed how to select reliable funding sources based on existing services and under which conditions to develop/modify services suited to the ‘market’ of funding mechanisms.

Once the basic strategy is outlined, the user can learn more about the available financing.

The second part (too detailed to be contained in this paper) can be understood as a **source book** to assist in the selection of suitable financing mechanisms. Starting from the local self-financing level, the national and finally international mechanisms and sources are analysed from the perspective of suitability for different biodiversity protection financing needs. Their strengths and weaknesses are outlined and sources and examples for further study and help to access funding are provided.

Note that mechanisms, which are relevant on several levels, are mainly dealt with at local scale.

As a source book, it is not designed for coherent reading cover to cover, but to use the orientations in chapter 9 to directly go to the mechanisms of interest. A key function is to provide the user further information about case studies, useful sources of further reading, funding organisations and contacts. Cognisant of the difficulty to access libraries, international journals etc. from often isolated project locations, utmost care was taken to select information available via the internet and to provide direct links for document download and homepages.

To help the user **navigate** within the guide, the electronic version (i.e. the document in Microsoft Word [* .doc] or Adobe Acrobat Reader [* .pdf] formats) offers hyperlinks throughout:

1) **Table of contents** and **chapter cross-references in the text**:

click on the chapter of interest to jump there (your mouse will take the look of a white hand if you come near such a cross-reference).

2) **Overview tables** of suitable mechanisms are the key to understand the mechanisms – in chapter 9.6 : click on the mechanism of interest to jump to the relevant chapter

3) **Autors' names**: click on those marked in blue with dotted underline to jump to the bibliography

4) Key reading and further sources in each chapter:

- click on the literature source to jump to the bibliography (although they are mostly fully spelled out to have all information for one issue on one page)
- click on the hyperlinks provided with case studies and further sources to jump to internet locations or authors in the bibliography

5) Bibliography:

- click on fully spelled-out http hyperlinks to download or go to the **location in the internet** from where they were taken. These hyperlinks were valid at the time of writing (5/2001). The volatility of internet references naturally limits their longevity. Mostly, however, homepages of the respective organisations can be found by copying the reference into your browser and slash by slash deleting the last segments.

- (planned: click on blue & dotted underlined titles to open available files on an **accompanying CD** – It is planned that most of the hyperlink-marked documents and additional specific information can later also be requested together with this guide on a forthcoming CD from GTZ, i.e. Rolf.Mack@gtz.de or Dirk.Kloss@gmx.net).

In all cases, you can **return to your original location** by clicking on the ‘back’ button on your navigation menu bar.

9. Strategy for sustainable financing

Financial sustainability involves more than simply finding additional sources of income. The guide will not treat other important management aspects such as capacity development, reliable accounting, etc. The rationale for an inclusion of professional business tools in conservation was explained earlier in line with IUCN’s ‘business approach to conservation finance’ (IUCN-WCPA 2000). However, looking from a more integrated perspective, it should at least be mentioned here that every conservation agency or area, among others, has to:

- work out a viable management concept (including time-frame and planned development),
- determine the associated financial needs,
- develop a suitable financing strategy, including
 - increase cost recovery (fees, new sources)
 - reduce costs by effective management, prioritising activities
 - share costs with partners (businesses, other users, NGOs, donors)
- analyse potential ‘markets’ for biodiversity service,
- select suitable funding mechanisms,
- develop biodiversity services, marketing & access to funding mechanisms.

Box 1: Examples: Problems in estimating and covering conservation costs

Effective conservation in African protected areas is estimated to cost between \$200 and \$230 per km², yet James (1998) reports the following agency budgets in \$ per km² for selected east and southern African countries:

• Angola	< 1	• Namibia	70	• Uganda	47
• Botswana	51	• South Africa	2,129	• Zambia	23
• Kenya	409	• Tanzania	30	• Zimbabwe	436

Though some countries are funded above the effective conservation level, many are not—and budgets for other sub-Saharan countries are generally lower still. It is estimated that on average across developing countries, protected area budgets represent only 30% of the financial requirements for effective conservation. Average per km² funding in developed countries (\$2,058) is much greater than in developing countries (\$157), but the former also face budgetary constraints (James et al in Lindberg 2001: 3).

Lindberg (2001: 3) shows an array of examples from developed countries with funding difficulties to the extent that 1) domestic beneficiaries of public natural areas can not be galvanised into pressuring politicians to allocate greater funding for such areas and/or 2) international beneficiaries do not pay for the benefits they receive, public area management agencies are forced to “sell” area benefits in order to expand their budget. In other words, they have an incentive to create a market in the biodiversity they manage because non-market funding mechanisms have been inadequate relative to conservation needs and the benefits that such areas bestow on society.

3 Determining the needs and developing a financing strategy

Financial planning that suits their foreseeable needs and challenges requires protected area managers to first identify their current situation and possible future trends. A range of guidelines (e.g. EC 1998, McNally 2000, or Inamdar/Merode 1999) are available.

Inamdar/Merode (1999: 18-28) describe **four basic steps** towards a sustainable financial management and strategy:

- 1) **Monitor all transactions of the area or organisation**
 - to understand the financial status of the protected area (incl. bookkeeping)
- 2) **Create an income model**
 - to identify current sources of income and quantify how income will change in the future
- 3) **Build an activity cost model**
 - to assess the real cost of providing protected area services at the desired level
- 4) **Forecast cash flow**
 - to reduce costs and begin to identify opportunities for increasing revenue

At this point, particularly an example for the income model shall be stressed: Once a reliable annual recurrent budget (see Table 1) is established, a detailed analysis with prediction of trends for at least 5 years and action to be taken should follow (see Table 2).

Programmes with a wider significance and budget (or protected area systems) should consider a comprehensive study (see Box 2).

Table 1: Example: Annual Recurrent Budget

(GTZ-sup. Murchison Falls CA, Uganda, simplified)

Code	Activity Description	Revenue	Expenses	Balance
31000	Internally Generated	X		
32000	GoU Subvention and Donors	X		
	GoU Subvention	X		
	GTZ / DED	x		
	ICB / PAMSU	x		
41000	Personal Costs		Y	
42000	Operating Costs other than Personal		Y	
42100	Photocopying / Stationary / Computer		y	
42200	Uniforms and other Supplies		y	
42300	Advertisement and Exhibitions		y	
42400	Utilities		y	
42500	Audit and Consultancies		y	
42600	Repair and Maintenance		y	
42800	Other Expenses		y	
Total		Σ X	Σ Y	Σ X - Σ Y

Table 2: Example of an income model showing trends in income (Inamdar/Merode 1999)

Income	Current position	Prediction of trends	Action needed
Government grant	40% of income annually reviewed	Will decline to 0% within two years	Identify actual loss to core activities. Seek alternative sources of income?
International funding from donor agencies	20% of income from 2 research project 'contracts'.	Unsure. Do they cost more than we think?	Analyse costs and review pricing policy.
User fees - tourism	20% of income	Will probably stay at this level with little effort	Do we need to explore opportunities to increase fees?
User fees - resource contracts with private sector timber concessions	10% of income	Will remain at this level	Can we increase fees without losing clients?
Public donations	10%	Likely to remain at this level with little effort	Do we need a fund raising strategy?

Box 2: Example of a financial assessment

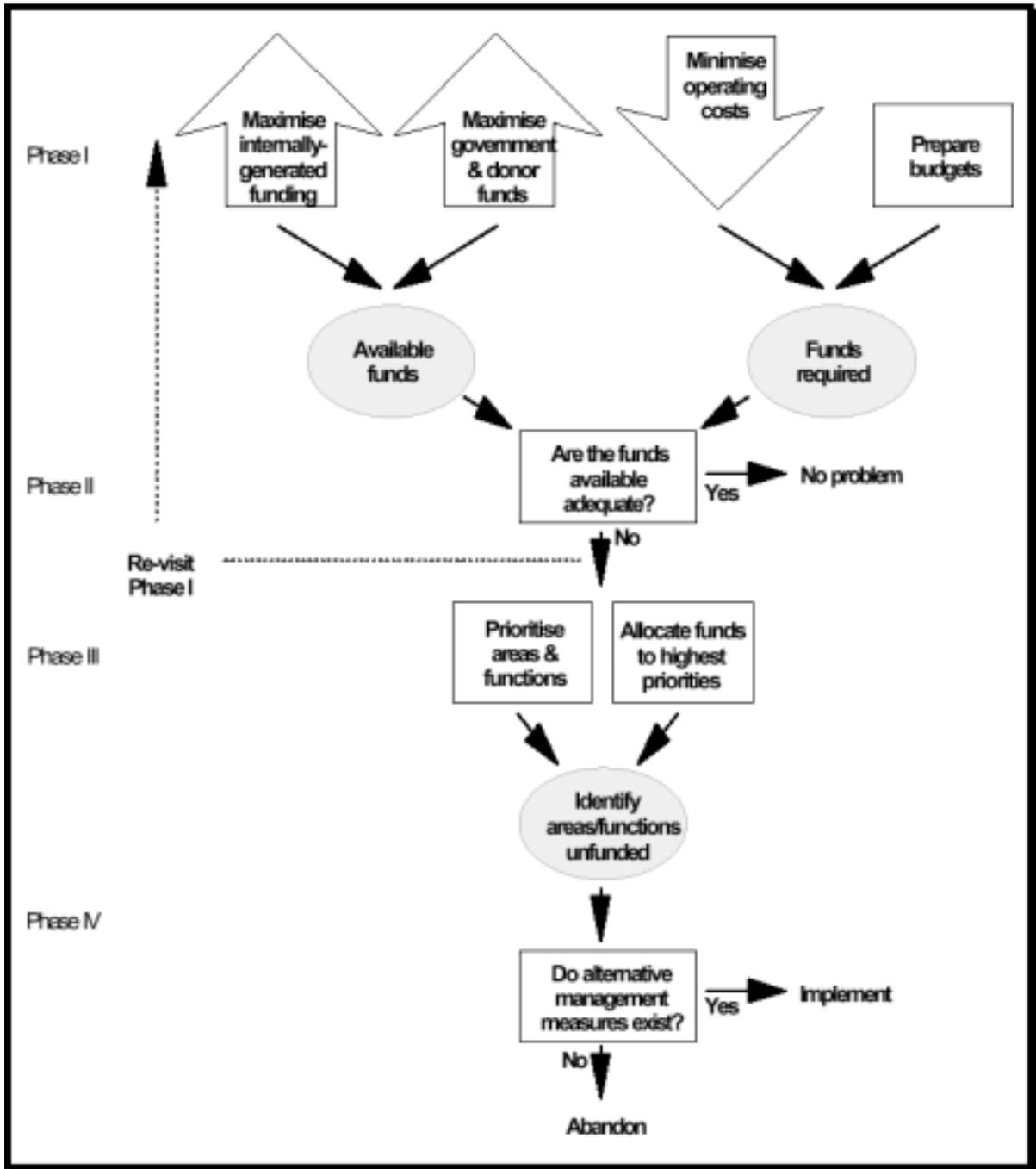
(GTZ-supported 'Murchinson Falls CA', Uganda, 5/2001)

1.	Selection and Access to Financing Sources
1.1	Existing Finance Sources
1.2	Analysis of Financing Sources Currently Utilized in East Africa
1.1.1	Uganda
1.1.2	Regional East Africa (Tanzania, Kenya, Ethiopia, Madagascar)
2.	Analysis of Required Finance – MFCA (5 years)
3.1	Recurrent Expenditure
3.2	Development Expenditure
3.3	Internally Generated Income
	Existing
	Assumptions
	New Projections
3.	Identification of Funding Source Options - MFCA
3.1	Need for Recurrent versus Development Budgets
3.2	Total Budget Requirements
3.3	Funding Alternatives

Another suggestion for steps to arrive at a sustainable protected area financing strategy suggested by Harpe (1997, see Figure) can help managers to prioritise and streamline work flows.

Step 4 (forecasting cash flow) of the above list by Inamdar/Merode or Phase III in Harpe's figure on phases in preparing for sustainable financing stress one management aspect that is important also to all donors: cost effectiveness of management. It has many implications, most obviously in financial discipline and effectiveness of day-to-day operations in conservation implementation. However, long-term cost effectiveness must already be considered in the design of facilities and services in the protected area. For example, it will make a big difference in the long run, what kind of infrastructure the park established, initially often with the help of substantial external financial assistance. An extensive network of roads (paved - unpaved, wider than necessary ...), lodges, fences, camping installations etc. may be useful to attract and accommodate tourists, but the resulting costs have to be recovered for many years, causing a heavy load on park budgets and compromising available staff and budget for the original conservation activities. Inamdar/Merode make a convincing case of always staying above the brake-even point by reducing fixed costs to a minimum. The most obvious way is to contract all activities to private entrepreneurs, who then carry all the investment risk, have to manage with off-season slack and are usually much higher personal motivation and ways to turn an enterprise to profitability.

Figure 1: Steps for developing sustainable protected area financing



Box 3: The Task Force on Management Effectiveness

was established by the Steering Committee of IUCN's **World Commission on Protected Areas** in April 1998. The primary mission is to improve the selection and management of protected areas by providing managers, planners and other decision makers with methods for assessing the effectiveness of protected area management. The Task Force addresses mainly two aspects of management effectiveness:

1. the management of existing protected areas (are the existing protected areas effectively managed?);and
2. the location and design of new protected areas (will the protected area network represent and effectively retain regional and national biodiversity?). For more information about the task force and its activities visit

<http://www.wcpa.iucn.org/taskforce/effect/mgteffect.html>

The website is also located at:

<http://www.nrsm.uq.edu.au/wcpa/metf/>

According to a controversial study by IUCN for World Bank/WWF (1999), most national parks, wildlife refuges and other protected areas in developing countries are poorly managed, leaving only 1 percent permanently secure in the countries surveyed. IUCN and others have issued a range of surveys and guidelines for improving Park Efficiency (Hockings et al. 2000, Cifuentes/ Izurieta 1999, Bruner/Rice 2000). Evidence suggests that most of the protected areas of the world are managed on very small budgets. **Box 1** shows that protected areas in Africa (similarly in Latin America) are managed on less than \$150 per square kilometre on average, well below the benchmark level of \$250 per square kilometre required for adequate conservation. Government funding of protected area agencies in the developing countries amounts to only one third of the funding required to achieve their stated conservation objectives (James *et al.*, 1998). Further, examples of “paper parks”, or govern-

ment gazetted protected areas that have no administration or budget, are common in many parts of the world (Dudley/Stolton 1999).

An even more detailed analysis could separate the mechanisms by management category of protected area (I-VI; ranging, even within one area, from full protection to development/production objectives).

4 Analysis of existing biodiversity/protected area services

Based on the above analysis of financial needs of conservation areas, the next logical step to cover these costs is to analyse the existing and potential services (environmental, economic, socio-cultural) provided by a biodiversity area system to users.

Most studies at this stage provide a detailed list of the benefits and biodiversity/environmental values provided by conservation areas. As this is already done sufficiently in IUCN-WCPA (2000: 7-8, the reference guide to our guide; see also IUCN-

WCPA 1998 and Plän 1999 on valuation), we go directly to examine the income they can provide.

While Inamdar/Merode (1999: 29) only see a few real sources of potential revenue for protected areas (1. tourism, 2. resource utilisation incl. bioprospecting, 3. ecological services like carbon sequestration, and 4. existence values (charging media rights and receiving international donations) it is exactly in these values where lies the biggest potential to mobilise finance. The most direct are the so-called ‘user-pays’ mechanisms: be it improvements of conventional mechanisms or identification of services, for which the users still need to be convinced to pay. According to the structure chosen in this guide, the examples in

Table 3 collection mechanisms are characterised in market mechanisms and transfers (public and private).

Table 3: Examples of fees and charges to recover PA costs

(Inamdar/Merode 1999: 33, modified)

Collection Mechanism	Local	National	International
User fees and royalties	Gate	Sustainable timber	Premium entry charges, film
Market based mechanism	entrance fees NTFPs, e.g. resins, game	concessions 'New' NTFPs, e.g. medicines, materials, nuts, etc.	location fees. Timber (incl. lesser known species), NTFPs, e.g. rubber
Taxes and levies	Water	Unsustainable & destructive	Carbon permit sales to energy
Transfers (mainly public)	charges	extraction, e.g. mining	utility/oil companies.
Willingness to pay	Landscape beauty/amenity value, Biodiversity & habitat protection/conservation		
Transfer approaches (mainly private)	Obtain subscriptions to protected area Club or Association from local, national and international NGOs and large private sector organisations. Foundations at national or international levels		

In the path-breaking cost -benefit analysis of the Korup Project in Cameroon, Ruitenbeek (1989) demonstrated that the costs of conservation (can be covered by the direct and induced benefits the area provides (without here analysing how costs and benefits were arrived at; see Table 4).

Table 4: Cost-benefit analysis of the Korup Project, Cameroon 1989

Direct costs of conservation		-11.913
Opportunity costs	Lost stumpage value	-706
	Lost Forest Use	-2.620
		-3.326
Direct benefits	Sustained forest use replaced subsistence production	977
	Tourism	1.360
	Genetic value	481
	Watershed protection of fisheries	3.776
	Control of flood risk	1578
	Soil fertility maintenance	532
Induced benefits	Agricultural productivity gain	905
	Induced forestry	207
	Induced cash crops	3.216
		4.328
Net Benefit – Project		1.084
Adjustments	External trade credit	7.246
	Uncaptured genetic value	-433
	Uncaptured watershed benefits	-351
Net Benefit Cameroon		7.545

Some studies of direct use values seem to indicate that using tropical forests for their non-timber values is more economic than logging. For example, Peters *et al.* (1989) estimated that sustainable harvesting per hectare in the Peruvian Amazon would yield a sustainable benefit of \$1987 per hectare, while clear-felling would bring in a one-time net revenue of only \$1000. Sustainable harvesting of medicinal plants in Belize would yield a net present value of \$3327 per ha, while plantation forestry with rotation felling yields only \$3184. Travel cost evaluation of tourist trips to Costa Rica's protected areas for foreign visitors amounted to US\$12.5 million per year, giving the protected areas a value per ha which was over 12 times the market price of local non-protected

area land. Nevertheless, a general case that non-timber values are more economic than logging has not been made. While many of these direct values are substantial, indirect uses often yield even greater values. Schneider (1992) estimated a carbon storage value of tropical forests as \$1300-5700 per ha per year, while the total carbon storage value of the Brazilian Amazon has been calculated as \$46 billion; and Western (1984) determined that each lion in Kenya's Amboseli National Park is worth US\$27,000 per year in visitor attraction (the same lion would have a direct value of about \$1,000 as a skin). Whether such estimates, however, have any relation to what the consumers are willing to pay is another matter. (all sources quoted in McNeely/Vorhies 1999: 10-11)

More and more practitioners hesitate to apply traditional cost-benefit analysis to determine a forest's worth. Such exercises typically come up with low values for many of the same reasons that market prices do not fully reflect forests' true contribution. Rather than favour

conservation, the results could justify the massive elimination of natural vegetation. Opinion polls consistently show that the public does not want that. It is revealing that even one of the most experienced cost-benefit proponents, Aylward (2000), found big errors, both in the developed and developing country literature on the value of the hydrological services forests provide. That literature focuses on the role of forest cover in avoiding the sedimentation of reservoirs, rivers, coastal areas, harbours, and irrigation systems. Less sediment often means more useful space for water in the reservoirs, easier navigation, lower dredging, turbine maintenance, and water treatment costs, and less damage to aquatic ecosystems. The size of the benefits varies widely. Exaggerated and poorly documented claims abound. For the United States, research on practically every off-site impact of eroding soils provides a nationwide estimate of the annual monetary damage of \$6.1 billion (in 1985, Aylward (2000: 13). Aylward points out that few people have studied the economics of how forests affect annual water yields, flooding, dry season water flows, and ground water levels. Several found that the absence of tree cover can actually provide major benefits since it increases the total amount of water flowing into reservoirs and lakes. Most studies that show forest cover significantly reduces flooding damage and the cost of dry season water shortages use weak data, unproved assumptions, and questionable methodologies. Our existing knowledge does not allow us to say much about the economics of how deforestation or reforestation affects flooding or dry season water shortages. Future research in this area should address these issues and not just focus on sedimentation (ibid. 26).

More practical are the examples in IUCN-WCPA's (1998) 'Guidelines for Protected Area Managers - Economic Values of Protected Areas'. It gives a useful overview of how the economic values of protected areas can be assessed and provides 16 examples or case studies of the process of valuation. While each valuation exercise is unique, learning from practical experiences is probably the most useful way to understand how valuation can be used for a protected area and what a valuation study may entail in terms of resources, data and time. Nuding (1999) emphasises the development potential of wildlife management in rural areas as a means of alleviating poverty while simultaneously promoting the sustainable use of natural resources. Wildlife management can supplement income from agriculture and provide incentives for a sustainable management of natural resources, as it can be a source of food as well as a source of income through tourism.

5 Analysis of potential 'markets' for biodiversity services

In the context of a more professional approach to financing, park managers should take a fresh look at the potential 'markets' for biodiversity services provided by their areas. It may help to separately treat the existing customers and markets from potential ones.

Table 5: classifies the potential customers of environmental services.

(Landell-Mills 1999: 27, modified)

Environmental service	Related commodity	Sources of demand (customers)
Watershed protection	Reduced flooding, reduced soil erosion and siltation	Domestic – hydroelectricity companies; water supply companies; farmers and other water dependent industries/individuals
Protection of landscape beauty	Eco-tourism concessions; protected areas; access permits; tradable development rights * (TDRs), conservation easements	Domestic/International - Tourist agencies; tourists; photographers; media; conservation groups; foreign governments
Protection of Biodiversity	Bio-prospecting rights; research permits; protected areas, TDRs, conservation easements *	Domestic/International – pharmaceutical, cosmetic, biotechnology companies, agribusiness, etc.; environmental groups; foreign governments; GEF
Carbon sequestration	Carbon credits/offsets	Major carbon emitters (e.g. electricity, vehicle and chemical companies); research and environmental groups; foreign governments

* TDRs and conservation easements are property rights to develop an area of forest (e.g. for agriculture, logging or other extractive uses) which may be purchased by a third party interested in restricting use. To date TDRs have been introduced mainly in North America (Richards 1999)

Table 6: Sources of finance (modified adapted from Landell-Mills 1999)

	Private (commercial)	NGO & non-commercial private	Public
Domes- tic	personal (family and friends)	environmental and social NGOs	government departments/agencies
	formal lending institutions (e.g. banks, leasing companies)	community based organisations and communities	/enterprises responsible for forestry, e.g. Forestry Department, Forest Authority
	informal credit entities	benefactors	Development (state-owned) Banks
	direct investors, e.g. upstream forest companies, large-scale landowners	charitable trust funds, foundations, endowments, etc.	Government Forestry / Environmental Funds
	venture capital funds		

	Private (commercial)	NGO & non-commercial private	Public
Foreign	formal lending institutions (e.g. banks)	international NGOs international benefactors	bilateral donors (e.g. USAID, DFID, FINNIDA)
	direct investors (international forestry company)	international charitable trust funds, foundations, endowments, etc.	multilateral donors (e.g. GEF, IDB, FAO, UNDP, World Bank, IFC, ITTO)
	international venture capital funds	environmental, not for profit, venture capital companies (e.g. EEAF)	foreign export agencies (e.g. OPIC)
	portfolio investors (forestry, ethical, green funds)		public research institutions specific donor Funds, e.g. small grants fund (UNDP), sector investment funds (IFC/GEF), charitable trust funds

Finally, we provide **ten recommendations for decision makers** specifically in development cooperation (DC), taken from Plän's (1999) assessment of application-relevant methods and mechanisms for the Economic Valuation of Biological Diversity:

- establishment of project-oriented cost-benefit analyses applying the available valuation methodology for the DC projects themselves,
- training and capacity-building to inventory and monitor biodiversity in the partner countries,
- the creation and enforcement of institutional frameworks for the development and implementation of national biodiversity strategies,
- training and capacity-building within the partner countries to carry out cost-benefit analyses and valuation techniques,
- the support of research capacities in developing countries at the frontier between ecology and economics,
- the identification of failed interventions and consultation concerning their dismantling,
- consultation on the establishment of economic incentives, especially market-based ones,
- the development of strategies for the participation of local communities in biodiversity yields,
- assistance in the creation of vested titles/property rights and
- co-operation in creating GEMs on the basis of bilateral and multilateral agreements.

6 Selection of suitable funding target mechanisms

Our recommendations for protected area managers and decision makers is, based on the above rationale of financial sustainability: Starting as much as possible with mechanisms based on local level, then move upwards:

1. Self-financing as far as possible
2. Cross-financing through protected area system on national level
3. International assistance

In this chapter are the two key orientation tables for sustainable financing mechanisms. They are arranged according to local/national and international level, and characterised (starting from the self-financing (user fees, resource charges) into market approaches, private investment, and finally transfers, based on willingness to pay for otherwise not financially marketable services by private and public mechanisms.

In Table 7: Overview of sustainable financing mechanisms, an attempt is made to display all instruments, both conventional and innovative, together. The mechanisms on the upper left corner are the closest to direct, local protected area self-financing (user fees etc.). This is indicated by an underlying green colour. Towards the lower right, the transition to more government-assisted or willingness to pay-based instruments is indicated by a gradual transition of the underlying colour from green to an earthy-brown tone.

Obviously, this is a simplification, but it is an attempt to help the user identify mechanisms he can influence from the local perspective of a conservation area or system, for which type of mechanism partnerships with private companies are a prerequisite, and for which transfer mechanisms co-operation with local, national and finally international NGOs, or donors is required.

In it is attempted to further assist the user to choose the most viable mechanisms for their special conditions, by introducing some key selection criteria.

(In the actual guide, the user can click on hyperlinked topics in the table and automatically goes to the respective chapter. Issues relevant on several levels (local, national, national) are dealt with in the same chapters.)

Table 7: Overview of sustainable financing mechanisms

	Local	National	International
Market approaches (private commercial use of public good benefits)	<ul style="list-style-type: none"> * User fees <ul style="list-style-type: none"> - entry fees - tourism - resource use (logging, fishing, hunting, etc. depending on the management system and protection status of the park) * Cause-related marketing 	<ul style="list-style-type: none"> * Resource use charges <ul style="list-style-type: none"> - water - Soil-erosion protection (e.g. for hydro-power reservoirs) * Certification and trade of biodiversity products (timber, non-timber forest products, dolphin friendly tuna, croco-/turtle farms etc.) 	<ul style="list-style-type: none"> * Resource use charges (e.g. water) * Tradable development rights * CO₂ sequestration offsets * Portfolio capital <ul style="list-style-type: none"> - equity markets - ethically sound company investment funds - biodiversity venture capital funds * Marketable biodiv/forest protection and management obligations
Private investment flows (possibly with public support)	<ul style="list-style-type: none"> * Direct investment schemes <ul style="list-style-type: none"> - Tourism - forestry - bioprospecting 	<ul style="list-style-type: none"> * Direct investment schemes <ul style="list-style-type: none"> - tourism - bioprospecting * Small and medium scale enterprise credit lines * Micro-credit * Small targeted grants 	<ul style="list-style-type: none"> * Direct investment schemes <ul style="list-style-type: none"> - tourism - bioprospecting * Biodiversity venture capital funds * Compensation investments mitigating impact e.g. of oil companies
Private (NGO and non-commercial)	<ul style="list-style-type: none"> * Adoption programmes * Friends-of-the-park schemes * Donations <ul style="list-style-type: none"> - Corporate donations - Individual donations - Advertisement * related donations/ Internet site referrals or memberships 	<ul style="list-style-type: none"> * Grants from private foundations * Lotteries * Other donation schemes 	<ul style="list-style-type: none"> * Project / programme /budget line funding <ul style="list-style-type: none"> - International NGOs - Foundations / charitable trust funds * Debt swaps
Transfer payment approaches Public		<ul style="list-style-type: none"> * Fiscal instruments <ul style="list-style-type: none"> - Taxes - Levies, Surcharges, Fines - Tax incentives - Tax deduction schemes * Government budget, agencies for protected areas / forests * National environmental funds, debt swaps 	<ul style="list-style-type: none"> * Fiscal instruments * Tax agreements * Trade agreements * Debt-swaps * Project / programme /budget line funding <ul style="list-style-type: none"> - Multilateral banks / institutions - Bilateral development co-operation agencies/banks - Global Environment Facility (GEF)

Table 8: Selection criteria and suitability-evaluation of funding mechanisms (Draft)

Financing mechanism		Innovative / Difficulty Degree	Need for Govmnt Facilitation	Potential funding volume	Benefit categories	
					Commercial Income	Conser- vation
Market Approaches (direct commercial use of public good benefits)						
1.	User fees - entry fees, tourism, resource use (logging, fishing, hunting), etc.	△	△	■	■	■■
2.	Cause-related marketing	▲▲	○	□■	■	■■
3.	Resource use charges (e.g. water)	▲	△	○-■	■	■■
4.	Certification and trade of biodiversity products (timber, non-timber forest products, dolphin friendly tuna, croco-/turtle farms etc.)	▲▲	○	○-■	■	■
5.	Tradable development rights	▲▲	▲	○-■■	□	■
6.	CO ₂ sequestration offsets	▲	▲▲	○-■■	□	■
7.	Portfolio capital (equity markets, ethically sound company investment funds, biodiversity venture capital funds)	△	○	○-□	■■	□
8.	Marketable biodiv/forest protection and management obligations	▲▲▲	▲	□-■■	□	■
9.	public-private instruments	▲▲	▲▲	■■	■■	■
Private Investment Flows (direct concessionary use, possibly with public support)						
	Direct investment schemes (tourism, forestry, bioprospecting)	△	▲	□-■	■■	■
	Bio-prospecting fees	▲▲	▲	○-■	□-■	■
	biodiversity / forestry venture capital funds	▲▲	△	■	■	■
	small & medium scale enterprise credit lines	△	▲	■	■	□
	micro-credit medium	△	▲	■	■	□
	small targeted grants	△	▲▲	■	□	□
Transfer Payment Approaches – Private						
	Project / programme /budget line funding (International NGOs, Foundations / charitable trust funds)	△	△	■■	□	■■
	Grants from private foundations	△	△	■	○	■■
	Donations, friends-of-the-park schemes, ...	△	△	■	○	■■
	Lotteries	▲	▲	■■	■	■■
Transfer Payment Approaches – Public						
	Fiscal instruments (taxes, levies, surcharges, fines, tax incentives, trade agreements)	▲	▲▲▲	■	○	■
	Project / programme /budget line funding (Multilateral banks / institutions, bilateral development co-operation agencies/banks, Global environment Facility (GEF))	△	▲▲	■■	□	■■
	debt-for-nature swaps	△-▲	▲▲	■■	□	■■
	national environmental funds	▲▲	▲▲▲	■■	○	■■■
	environmental performance bonds	▲▲	▲	■	■	■

Legend:

The hyperlinked Chapter numbers indicated behind the four main groups of mechanisms are referring to the local, national, international level respectively. Ranges apply where conditions vary between areas; e.g. availability of water user determines whether resource use can be charged.

Problematic	Positive
○	No
△	Low
▲	Medium
▲▲	High
	○
	□
	■
	■■

Parks can practically change their approach and thinking about funding mechanisms, what they have to think of if they want to gain access to innovative funding mechanisms (e.g. definition and development of the services their particular area provides, improved awareness through large-scale marketing, etc.). This means, in short, developing biodiversity services, marketing & access to funding.

In part II of the guide document, users can find more information helping them to decide about the suitability of funding mechanisms for their special needs and conditions.

Starting from the local instruments most relevant for the characteristics/local conditions of the biodiversity area (system), each mechanism is analysed for its strengths and weaknesses (including volume, selection criteria/conditions, reliability, duration, thematic flexibility, ability to co-operate with other funding mechanisms, networking services, etc.). Some of these mechanisms do not only belong to a single level but could originate from any of them or at least need a local management system, such as tourism investments, donations, friends of the park schemes, etc. Their specific characteristics are described at the respective level. Based on this analysis, existing rules and recommendations for access are outlined.

All chapters are designed in a very condensed way. By referring the user who might be unfamiliar with a certain mechanism to the respective introductory documents (such as IUCN-WCPA 2000), the guide concentrates on strengths, weaknesses and critical conditions for the success of a given mechanisms.

The modular system further avoids redundancies and, particularly if based in the internet, facilitates and invites constant feedback and improvement.

Detailed training guidelines for the actual design of a certain financing mechanism of given area are under preparation (e.g. some with the help of a UNEP / TNC project by the end of 2001) -- particularly the more innovative, long-term mechanisms such as carbon investment projects, water and other user fees, debt-for-nature swaps and conservation trust funds. They will be written in ways that most effectively support on-the-ground, practical application by individuals with limited knowledge of the field and limited or no support from technical experts. Practitioners and planners require information packaged in user-friendly and action-oriented formats that help them better understand various finance mechanisms and select / implement the most appropriate options for their particular situation by guiding them through step-by-step decision-making processes.

The training modules will include the following broad categories of information and tools:

- User-friendly descriptions of a comprehensive list of conservation finance mechanisms, along with step-by-step methodologies (focus on non-traditional mechanisms);
- Screening and feasibility tools using tables, spreadsheets and other formats;
- A series of detailed case studies, covering several regions, describing the sequence of steps taken, and the critical barriers and keys to success of finance mechanisms established at the national and site levels; and
- Reference information (e.g., bibliography, web sites, roster of technical experts).

10. Key reading and information

Below is only a small selection from the main bibliography. To reduce footnotes and make the document more readable, authors' names in the text are hyperlinked to the Bibliography in the annex. In the bibliography, the titles of the respective documents are hyperlinked to available files on an accompanying CD, and fully spelled-out http hyperlinks are provided for the location in the internet from where they were taken. These hyperlinks were valid at the time of writing (5/2001). The volatility of internet references naturally limits their longevity. Mostly, however, homepages of the respective organisations can be found by copying the reference into your browser and slash by slash deleting the last segments. A host of resourceful homepages, most with collections of related links, is mentioned at the end of this document.

It is planned that most of the hyperlink-marked documents and additional specific information can later also be requested on a forthcoming CD from GTZ (Rolf.Mack@gtz.de and Dirk.Kloss@gmx.net). (some * marked filenames are based on the IUCN biodiversity CD issued for the 2000 Amman World Conservation congress, which in some instances may not fully correspond with the filenames on the IUCN homepage)

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	<u>Workshop Secretariat:</u> Andrea Saupe (Technical Assistant)		

Annex 2

Agenda

Financial Instruments for Nature Conservation

27 May - 31 May 2001

27 May 2001

14.10 *Ferry to Vilm, Check in*

14.30 *Lunch*

16.00 Welcome (HANS DIETER KNAPP, Federal Agency for Nature Conservation, ZENON FEDERKO, IUCN Central Europe)

Introduction of participants

16.45 **1. Introduction**

Chair: GERNOT BÄURLE

16.50 Costs and Benefits of Nature Conservation: WOLF KRUG, CSERGE

17.30 Ecosystem Approach to Financing Nature Conservation: GERNOT BAEURLE, IUCN-CE

17.45 Overview of financial instruments: GISELA STOLPE, Federal Agency for Nature Conservation

18.30 *Dinner*

20.00 Overview of experience with financial instruments in the Russian Federation: RENAT PERELET, OLGA KREVER, DMITRY CHERNIKHOVSKY, IUCN-CIS

28 May 2001

09.00 **2. International Instruments**

Chair: WOLF KRUG

The role of Joint Implementation and Greenhouse Gas Emissions Trading for Project Finance: AXEL MICHAELOWA, Hamburg Institute of International Economics

First Thoughts on Using CO₂-Trading for Financing Nature Conservation in Bulgaria: GEORGY TINCHEV, Bulgarian National Forestry Board

- 10.30 *Coffee break*
- 10.50 European Conservation Farming Initiative: GEERT POSMA, Avalon Foundation
- 11.50 Green Funds – Private Money for Nature: THEO VAN BELLEGEM, Dutch Ministry of the Environment
- 12.30 *Lunch*
- 13.30 Guided tour through the nature reserve Vilm
- 15.00 *Coffee break*
Chair: MART KÜLVIK
- 15.30 EU Assistance Towards Nature Conservation in Central/Eastern Europe and in the Russian Federation - Modalities and Experience: CARLOS SUNYER, TERRA
- 17.30 *Coffee break*
- 17.40 Discussion
- 18.30 *Dinner*

29 May 2001

- 09.00 **3. National Instruments**
Chair: GISELA STOLPE
- 09.05 Environmental Funds:
1. ECOFUNDUSZ Poland: MARIAN CIESLAK
2. Strana Zapovednaya-Russian National Fund for the Environment: NATALIA MORALEVA
- 10.40 *Coffee break*
- 11.00 Environmental Taxes, Levies and Surcharges: TOMME YOUNG, IUCN Environmental Law Centre
- 12.00 Discussion
- 12.30 *Lunch*
- 14.00 **4. Site Instruments**
Chair: BIRGIT HEINZE
- 14.05 Processing and Marketing of Local Products - A Mechanism to Fund Environmentally Friendly Land Use: Case study Rhön: DORIS POKORNY, Biosphere Reserve Rhön
- 15.30 *Coffee break*

- 16.00 Income from Commercialisation of Medicinal Plants - Ecological and Financial Sustainability: Case Studies from SE Europe: DAGMAR LANGE, Consultant
- 17.30 How Eco-tourism Can Finance Nature Conservation - BIRGIT STECK, Consultant
- 18.30 Dinner

30 May 2001

- 09.00 **4. Site Instruments (contd.)**
Chair: GISELA STOLPE
- 09.05 Fund Raising for Protected Areas: EUROPARC Federation, ZELJKO KRAMARIC
- 10.30 *Coffee break*
- 11.00 Private Sector Initiatives in Conservation: WOLF KRUG, CSERGE
- 12.30 *Lunch*
- 14.00 Chair: RENAT PERELET
- 14.05 Financing Protected Areas - Guidelines for PA Managers: DIRK KLOSS, Consultant
- 15.00 *Coffee break*
- 15.30 The Global Environment Facility in Central and Eastern Europe and the Russian Federation: A Guide to Developing Project Proposals and Synergies with EU Funds: MIHALY VEGH, ECNC
- 16.30 Looking Ahead:
Possibilities for follow up of the issues discussed (chaired by GERNOT BÄURLE)
- 18.00 Evaluation of the Seminar
- 19.00 Dinner

31 May 2001

departure

Annex 3

Information on Financial Instruments in the Internet

IUCN Economics Unit

economics.iucn.org

biodiversityeconomics.org

International Finance Corporation, Environment Division

www.ifc.org/enviro/EPU/Biodiversity/biodiversity.htm

The Kijani Initiative (IUCN + IFC), promoting African biodiversity business

kijani.org

Global Environment Facility

www.gefweb.org/

OECD Environment, Database on Environmentally Related Taxes

www.oecd.org/env/policies/taxes/index.htm

Convention on Biological Diversity: Financial Resources and Mechanism: Funding Institutions

www.biodiv.org/financial/cooperation.asp?x=inst

United States Environmental Protection Agency, National Center for Environmental Economics

www.epa.gov/economics/

Annex 4

Financing Nature Conservation in Poland

(compiled by Dariusz Piechowski)

Major financial support for nature conservation comes from the State Budget.

A specific source of funding is the National Fund for the Environmental Protection and Water Management, which was established under the Act on Environmental Protection. The Fund is supervised by the Minister responsible for the environment. There are respective Funds for Environmental Protection and Water Management acting on provincial, district, town and rural communes levels. The fund's resources are mainly coming from charges for using the environment, for releasing pollutants, and from penalties for violation of the permissible environmental pollution standards.

Other important source of funding from the point of view of financing nature conservation, is the Fund for Arable Lands Protection, which was established according to the principles of the Act on Arable and Forest Area Protection. This Fund is supervised by the Minister responsible for the agriculture. The fund's resources come from amount of dues and charges imposed for the exclusion of arable lands from production, fees for delay in reclamation of damaged areas and donations. This fund is divided into central and local. The local government on provincial level administers the sources of local fund (80% of income) and the minister proper for the agriculture administers the sources on the central level (20 % of income).

From ecological point of view financial investments are also co-financed by banks for example the Environmental Protection Bank which provides preferential credits for investors.

Another important source of funding is the "Eco-Fund" Foundation, which was established by the Minister of Finance. The aim of the Foundation is effective management of financing the resources resulting from the foreign debt for nature swamp, so called "Eco-conversion", i.e. partial change of Poland's foreign debt into projects pertaining to environmental protection within the territory of Poland.

Eco-conversion is not the only way of obtaining the financial resources from the other countries. The foreign aid covers also for Poland the following activities:

subsidies from the Global Environmental Fund (GEF),

financial support European Community within PHARE Programme,

subsidies and donations within bilateral agreements on co-operation with for example Denmark, the Netherlands, Germany, Norway, USA.